INDUSTRIAL MEDICINE AND SURGERY

INDUSTRIAL MEDICINE

The Journal of Medicine in Industry

This Journal is dedicated to the advancement of sound industrial medicine, including the surgery of industrial trauma. To that end its varying contents will embrace scientific papers, reports, digests, news items and official statements, together with editorial comment. The editorial policy is to avoid undue censorship. Some contributions ably prepared will be published although contravening the personal opinions of the editors. Care will be exercised in checking the accuracy of known facts, as printed, but in all other respects statements and opinions are those of the author and may not be shared by the editors. On any article, the editors reserve the right to comment favorably or otherwise, in the current or any subsequent issue. On this basis, contributions are invited. The opinions expressed in any contributions, including the editorials of this Journal, do not necessarily reflect the attitude or opinions of any associated organization.

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INDUSTRIAL MEDICINE AND SURGERY, The Journal of Medicine in Industry (with which are consolidated "The Industrial Doctor" and "International Journal of Medicine and Surgery"): Entered as second class matter August 28, 1941, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879. Reentered, October 3, 1949. Additional entry at Sheboygan, Wisconsin. Published on the fifth of each month by INDUSTRIAL MEDICINE PUBLISHING COMPANY, Chicago. STEPHEN G. HALOS, Chairman; HAROLD A. HOOPER, Treasurer; STEPHEN F. HALOS, President; CAREY P. MCCORD, M.D., Editor; D. L. FLOURNOY, Managing Editor; A. D. CLOUD, Publisher; JOHN A. LAWRENCE, Assistant Publisher; L. H. GROSS, Circulation Manager. Member, Audit Bureau of Circulations. PUBLICATION, EDITORIAL AND EXECUTIVE OFFICES, 605 North Michigan Avenue, Chicago 11, Illinois. Miami Office, 5301 S. W. 76th Street, Miami, Florida. Subscription $6.00 per year in the United States; $8.00 (U.S. Currency) per year in Canada; $12.00 (U.S. Currency) per year in other countries. Single copies 75 cents. Title Registered in United States Patent Office. Registered Canada, 1942. Copyright, 1957, by INDUSTRIAL MEDICINE PUBLISHING COMPANY. CHANGE OF ADDRESS: FOUR weeks notice required; changes cannot be made without old address as well as new; please furnish zone number for new address if city requires it.

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INDUSTRIAL MEDICINE AND SURGERY

JUNE, 1957

Physiological Effects of Some Newer Industrial Materials

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IN any presentation of a subject such as this, it becomes a major task to decide which of the many materials that have come into industrial use within the past several years should be included. Obviously, selection is somewhat colored by the writer's own knowledge and experience. Those here chosen are no exception.

Polymers

POLYURETHANES:

A useful class of materials, known as the "polyurethanes," has been developed within the past several years. These materials are finding increased uses in various applications such as foam, adhesives, coatings, and cast resins. The finished products are essentially inert, physiologically, but, in their manufacture, some serious health hazards arise. Basic to the manufacturing process is one or more of the isocyanates. These compounds, peculiarly, have low oral toxicities, but quite severe inhalation toxicities. To the toxicologist they stand as an excellent example of the need for properly designing toxicological evaluations, in order to assess correctly the physiological effect of a material. A considerable amount of animal experimentation and clinical observations has been made with toluene diisocyanate, commonly referred to as TDI. The general conclusions from these observations are that rigid controls must be used wherever TDI exposures occur. Atmospheric concentrations of the vapors must not exceed 0.1 parts per million, and individuals with existing pulmonary abnormalities or asthmatic-type sensitivities should be prohibited from exposure. The effects are primarily on the respiratory tract, and the symptoms in general are of the asthmatic type. Individual sensitivity seems to play an important role. Satisfactory control of the operations can be attained through the use of properly designed equipment and processes. These designs in general require enclosure and the use of process ventilation.

TEFLON:

Teflon is the commercial name of a polytetrafluoroethylene resin. It is a synthetic polymer, and has special properties which enable its use at both high and low temperatures for gaskets, hose, etc. It is physiologically inert, and nontoxic orally. It is without effect on the skin. A syndrome, sometimes referred to as "polymer fume fever," has been described as occurring in workmen following the inhalation of the heated polymer. This effect has not been reproduced in experimental animals. The effect, when it does

Presented at the Ohio Safety Congress, April 11, 1957, Columbus, Ohio.

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occur in humans, appears to be transitory, and is nonresidual even in the absence of therapy. Of more importance, however, from the standpoint of industrial uses, is the fact that certain of the decomposition products of the resin, resulting from its use at elevated temperatures, are toxic. The manufacturer of Teflon — E. I. du Pont de Nemours & Company — has conducted extensive investigation relating to the composition and physiological effects of these products. Additional work has been done elsewhere. It seems to be fairly well established that no harmful effects will result from the decomposition products occurring at temperatures below 200°C. Above 300°C, harmful decomposition products do occur, and their quantities increase with increasing temperature. Industrial processes, therefore, involving temperatures above 300°C, must be controlled with adequate ventilation to prevent exposure to these products. The effects of overexposure appear to be primarily of pulmonary origin.

SILICONE RUBBERS:

There are many types of silicone products commercially available, but those discussed here are the silicone rubbers. These are essentially modifications of dimethyl polysiloxane. The polymers themselves are inert and require no special handling in either their processing or use. They do, however, require being compounded with a variety of materials in order to become the fine silicone rubbers that are currently commercially available. Some of these compounding ingredients are hazardous and require special handling. Among them are the finely divided silicas, to be discussed later, certain metallic pigments, and organic peroxides. The metallic pigments may be compounds of mercury, cadmium, or selenium, and the handling of these does require rigid controls to prevent overexposure. Likewise, in the curing of the rubber, some of the metallic components may be volatilized so that a hazard from the corresponding metallic component may be thus created. The organic peroxides are generally unstable compounds, and careful handling, from the standpoint of fire and explosion, must be observed.

EPOXY RESINS:

The epoxy resins are some of the newer polymeric materials to come into industrial use. Perhaps their widest application at the present time is in the coating field, but new uses are being developed constantly. The skin of exposed personnel has exhibited sensitizing reactions to most of these materials. In formulating the resin, various amines are used, and this is believed to account largely for the severe skin effects. Too, the amines have significant vapor toxicities and, depending upon the specific one that is present, careful handling from the standpoint of inhalation may be necessary. It is wise, in the use of any epoxy resin, to secure from the manufacturer information regarding any handling precautions that are indicated.

Solvents

METHYL CHLOROFORM:

This solvent, within the past several years, has entered many industrial applications where carbon tetrachloride was formerly used. It is noninflammable and has solvent properties quite similar to those of carbon tetrachloride. Its toxicity is much lower, however, and for this reason it has replaced carbon tetrachloride in many applications. Animal and human observations indicate that atmospheric concentrations of 500 parts per million can be tolerated safely for prolonged exposure. The serious effects on the liver and kidney produced by carbon tetrachloride do not occur at this level. It is a narcotic in its physiological effects, and it cannot be used promiscuously. Dermatitis may occur from skin contact.

TETRAHYDROFURAN:

This solvent is increasing in usage — particularly for certain types of resins. Some animal experimentation has been done on its physiological effects and the results indicate that it is not a seriously hazardous material. Present indications are that 100 parts per million of the vapor in the air can be inhaled over prolonged periods of time without harmful effects, and that perhaps this level may be safely raised to 200 parts per million. Processes involving the use of the solvent will usually need to be supplied with process ventilation in order to attain this degree of control. No problem of skin sensitization occurs over and above that normally found with defatting organic solvents. Further clinical observations of workers are necessary in order properly to fix safe exposure levels. Its primary effect observed thus far is that of narcosis.

In 1955, la Belle and Brieger, of Jefferson Medical College, reported the effects of both acute and chronic exposures of a composite solvent on rats and guinea pigs. The composite solvent consisted of approximately 56% methyl ethyl ketone, appreciable quantities of tetrahydrofuran, propylene formal, 1,3-amylene oxide, 1,3-butylene oxide, dimethyl acetal, propylene acetal, and acetone. This is one of the few published studies involving the effect of mixtures. The results showed that the composite solvent was no more toxic than methyl ethyl ketone.

Others

FINELY DIVIDED SILICAS:

There are commercially available today several finely divided silica materials. These products are essentially 100% silica in amorphous form. Their average particle size is in all cases submicroscopic. They are finding increased use as components of certain types of rubber and as

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pigments. Some animal investigations have been conducted with several of the available materials, and in no case has the classical silicosis effect been observed. Some adverse physiological effects, however, have been found; these have varied rather widely among the several materials. Consequently, the hazard of using this type of material is not as yet clearly defined, and will require additional animal experimentation and human observations before it can be properly elucidated. It is the writer's opinion that these products should be handled with caution in the plant, and that dust exposure should be well controlled. Likewise, employees chronically exposed should be examined, with a chest x-ray, at periodic intervals.

OZONE:

It seems perhaps out of place in a discussion of new materials to mention ozone, but it is pertinent because of new information which has resulted within the past few years. Unfortunately, it is not well realized that this material is in the category of highly toxic substances. A maximum atmospheric concentration of 0.1 parts per million for prolonged exposure is generally accepted.

It is now known that ozone plays a leading role, and perhaps the primary one, in irritation resulting from smog. Only recently it has been observed that wide differences in the severity of the physiological effects occur among individuals, and are partially explained on the basis of exercise and pre-exposures. Exercise enhances greatly the toxic effects, while pre-exposure appears to develop a marked tolerance. The toxic effects are greatly enhanced under conditions of reduced atmospheric pressure.

From time to time there have been commercial fads involving the use of ozone to cure a number of mankind's ills. Several years ago a product was being marketed in which ozone was generated. It was intended to be used for the reduction of carbon monoxide in garages. Needless to say, the health hazard was being increased rather than decreased, through the introduction of ozone.

ACRYLAMIDE:

This is an intermediate, and has considerable potential in the syntheses of various materials. Recent animal experimentation has shown that its acute oral toxicity is moderate, but that it has a peculiar neurotoxic effect at low levels of exposure. Acrylamide exhibits essentially no species variation, and equally severe effects are produced by any route of administration. It appears that an anamnestic response also is produced, in that lesser amounts will produce the syndrome following cure. No safe levels of exposure are known. This represents another instance where the physiological effects of a material cannot be predicted from its chemical structure, nor from a simple determination of oral toxicity.

Summary

TODAY'S industry is constantly developing and using new materials. The physiological effects of these are usually unknown and must be determined in order to provide safe handling procedures and uses. The philosophy of industrial health personnel must be that any material can be used safely provided sufficient information is developed to enable the establishment of safe handling and use procedures. It becomes the job of the industrial toxicologist to develop the necessary information from experimental animals to assist in this establishment, and of the industrial hygienist to establish the necessary plant control procedures. The industrial clinician must be constantly observant of personnel working with new materials, because even the best bench marks, derived from animal experimentation, cannot be promiscuously extrapolated to human exposure.

Manager's Disease

DR. NORMAN VINCENT PEALE is a "doctor," but of Divinity. He is also a physician, in the broad sense of the word, since he does a great deal to heal the weary and heavy laden . . . He describes a European doctor's term for those people with tension, high blood pressure, and psychosomatic disorders — "the manager's disease." They find it in executives, or anyone with a managerial responsibility. People can even be called managers of themselves; when they fail to do so they are subject to manager's disease. . . . The treatment which Dr. Peale suggests is, naturally, religion. It is not a bad therapy for anyone to suggest.

—From "Topics of Current Medical Interest," in *Arizona Medicine*, March, 1957.

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Medical Ethics Versus Needs of Personnel Officers

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ALTHOUGH the physicians of the Hippocratic school wrote considerably about the effect of environment on health, and although Ramazzini, the father of occupational medicine, flourished from 1633 to 1714, industrial medicine in this country owes its start to workmen's compensation laws. Prompt treatment of industrial accidents promised to shorten recovery time and reduce the frequency of permanent disability and thus the employer's financial liability. In the beginning, therefore, industrial medicine consisted of little more than emergency traumatic surgery. The responsibility of the industrial surgeon, as he was called in those days, was little more than to give prompt and effective treatment to employees who suffered accidents. He was paid by the employer and he received his referrals from him, but his relationship to the organization which he served scarcely went beyond this.

It was not long, however, before employers recognized that accident prevention would be a good deal cheaper than the promptest and most effective treatment. The prevention of industrial accidents is largely a matter of industrial engineering, but the records of the Medical Department were important in pointing to the places where the greatest hazards lay. The industrial physician, therefore, was drawn a little more into the life of the factory.

His role was even more important in the development of preventive measures against industrial poisoning. The occurrence of an accident is readily known to the man's associates, and data about frequency could have been collected without going through medical records. But the occurrence of an industrial intoxication in its early stages can be discovered only by the physician, and if effective preventive measures are to be carried out the presence of a case of industrial poisoning must be made known promptly to those responsible. So periodic examinations of employees exposed to lead or phosphorus and the prompt reporting of early symptoms to those responsible for protective measures became an increasingly important part of the industrial physician's job.

THIS cooperation does not entail any particular difficulty. While the industrial physician may find it difficult to convince certain individuals of the seriousness of the hazards which he points out, the information that he has to communicate does not have any significant bearing on the traditional doctor-patient relationships. The occurrence of accidents is known before the patient gets to the clinic, so the use of medical records to locate hazards presents no ethical problems. Nor is there any serious difficulty in communicating to nonmedical people the fact that a case of industrial poisoning has occurred. While the discovery of this depends upon the examination of the patient by the doctor, the presence of a lead line (a blue discoloration of the gums indicating early stages of chronic lead poisoning) is not something a man is particularly sensitive about, and it frequently isn't necessary to identify the individual suffering from the condition.

As the industrial safety programs became more and more effective, the work of the industrial physician would have lessened if other developments had not occurred. The very effectiveness of the safety programs pointed to differences among employees in their susceptibility to various physical hazards. This variability and the extension of liability to the aggravation of chronic illnesses made it evident that the preventive program should begin at the time of selection. Further, as interests grew in matching men to the jobs for which they were employed, the matching of physical resources to job demands was recognized as an important part of the program. The pre-employment physical examination in many organizations has far outstripped emergency treatment in importance and time spent on it.

Still more recently, health maintenance has become an important responsibility of the occupational physician. Figures have been gathered which drive home to management the fact that the costs of sickness absenteeism and of the

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TEMPLE BURLING is Professor, New York State School of Industrial and Labor Relations. The findings discussed here are based on field investigation and the discussions on industrial mental health problems at two conferences on the Cornell campus; they first appeared in *ILResearch*, 3:1, 9 (November) 1956, published by the New York State School of Industrial and Labor Relations, Cornell University, Ithaca, New York.

loss of trained employees through premature retirement or death are staggering.

The introduction of pre-employment physical examinations and of a health maintenance program called for a new and much closer relationship between the Medical Department and the rest of the organization. Both programs call for teamwork and close cooperation between the Medical Department and line supervision and personnel. And at the same time, if pre-employment and periodic health examinations are to be effective, the physician must obtain intimate knowledge of the individual's health history. He is no longer dealing with items of common knowledge or emotionally innocuous facts. He is working with an area that has been recognized, from the time of Hippocrates, to demand a confidential relationship if the patient is to give the physician the information he needs to have.

INDUSTRIAL physicians feel very strongly that they will be completely unable to render the service which their firms want if there is any doubt in the minds of the employees that their relationship with the plant physician is any less privileged than it is with their private doctors. They feel, furthermore, that their position as employees of the firm makes it especially difficult to maintain confidence on the part of other employees. If anything, they must be even more obviously rigid in their observance of medical ethics than the private practitioner. They are convinced that this meticulous behavior is essential to the interest of the firms they serve.

On the other hand, personnel men feel the need of every bit of information they can get to guide them in their decisions. They feel, for example, that they could do a better job of placing an employee and helping his supervisor make the best of the man's assets and protect him from his liabilities if they knew not only that certain activities are dangerous for him, but why they are dangerous. But the "why" is bound up with the medical diagnosis and this in the doctor's eyes is "privileged" information.

Doctors are also wary of being drawn into decisions about promotions, for they feel rightly that if the belief becomes prevalent that the Medical Department influences people's progress the frank confidence between patient and doctor necessary for effective work will be lost. Personnel men, on the other hand, recognize that the organization makes a very substantial financial investment in a promotion and feel that the Medical Department should protect the firm against promoting a man who is physically or emotionally unable to handle his new job. When a man breaks down shortly after being promoted, the personnel man is very likely to feel that the doctor had information in his files which could have predicted this.

RELUCTANT though they are to impart information about individuals, many industrial physicians feel that they do not have as much voice in policy making as they should. A few years ago, I discussed mental health maintenance with a group of leading industrial psychiatrists and in the course of discussion said, "What you do about the problem will depend upon whether you are a member of the productive team or are simply operating a clinic that happens to be under industrial auspices." This stirred more discussion than anything else I said, and it was obvious that every man in the group felt that he was not being permitted to be as effective a member of the productive team as he wanted to be. They all felt that they had information about health and morale problems in their plants which ought to be taken into consideration in policy decisions, but the information was not asked for. The Medical Director, they felt, reports too far down in the line of authority to have any confidence that his opinions will reach policy makers. If a personnel man had been present at the discussion he might have said, "If you won't take your part in operating decisions, how can you expect to be heard on policy questions?"

These two points of view are both defensible, and there is some real conflict between them. But a satisfactory working solution is not impossible. In the first place, the personnel man doesn't need the diagnosis nor the intimate details of the employee's history, but he often does need a fuller understanding of the relationship of job conditions to employee welfare than is provided by a simple numerical classification.

In the second place, in a good many instances, the diagnosis is common knowledge. When a man has a heart attack or peptic ulcer, his friends know about it pretty promptly, and when the diagnosis is known the doctor can talk to the personnel men and discuss the consequences and limitations of the condition without violating medical confidences.

In the third place, where the plant physician has developed the sort of confidence he wants he can obtain the patient's consent to disclosing it in most instances in which the Personnel Department needs special information. After all, in questions of health, the interests of the firm and of the individual are usually the same. Where there is mutual understanding between the Medical Department and Personnel Department it is almost always possible for the doctor to give the information the personnel man needs without violating medical ethics or undermining the confidence of the employees and the integrity of the Medical Department. But this sort of communication demands the development of a great deal of mutual understanding which can come about only through a lot of face-to-face informal discussion.

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I HAVE BEEN amazed at discovering that in many organizations with well-supported Medical Departments communication between the doctors and the personnel officers is almost entirely written and often is little more than the forwarding of check lists. The information which the personnel worker needs is subtle and full of delicate shadings and can only be imparted through face-to-face give and take in which many questions are asked on both sides in order to clear up overlooked misunderstandings. This takes time, and many industrial physicians feel that this is a very scarce commodity. I firmly believe, however, that, if the only way to obtain enough time for developing easy understanding between the two departments is to lengthen the time between periodic health examinations, such an arrangement would better serve the interests both of the employees and of the firm.

In those organizations I have visited in which there was easy informal access between the members of the two departments, necessary information appeared to flow readily, and the Medical Department seemed to be increasingly in a position to make its rightful contribution to policy decisions. Where communication was almost entirely written, either the Medical Department was in, but not of, the organization, or the doctors were complaining that the Personnel Department was putting pressure on them to violate ethical principles, and the personnel people were complaining that the doctors were obstinately and unreasonably standing on the letter of the law.

Psychological Testing

HOW FAR can the president rely on psychological testing in selecting his executives? Presidents left the scheduled topic of one panel to discuss the possibilities of psychological testing. One point agreed on: psychologists can give only auxiliary aid to the chief executive in choosing his men. They can help, but they can't replace the president's experience and judgment. Twelve of the companies represented at the panel do use psychological testing in their executive selection. But this number included only four of the 24 smaller companies represented (those with 500 employees or less). The chief reason given for using tests: psychological tests — determining intelligence, aptitude, personality — can, like other tools of professional management, save executive time and prevent the waste of company money on men who would fail to meet company standards. The consensus was, however, that only partial reliance can be placed on psychological tests. Different presidents gave these reasons: (1) tests can err; (2) executive candidates cannot be catalogued exactly; (3) tests cannot determine key qualities like loyalty, industry; (4) the mental caliber of executive candidates permits them to outwit psychological tests, give the "right" answers; (5) not being businessmen themselves, psychologists may not detect or properly evaluate business judgment; and (6) psychological tests do best in singling out the patently impossible candidate—the easiest also for the president or his aides to eliminate. On the positive side: executives from five companies cited experiences with psychological rejects who (with only a few exceptions) failed as predicted by tests. Confidence in psychological testing rests on its success in a specific company, it was noted; the psychologist can, over a period of time, gain the confidence of management by the validity of his work. If he's oversold testing, presented it as a selection panacea, that too will appear in time. An industrial psychologist warned the panel against accepting testing results too rigidly—confirming the experiences cited by the chief executives themselves.

—From *The Company President*, Quarterly Bulletin of the American Institute of Management, March, 1957.

The Insurer's Role in Rehabilitation

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THE TITLE of this paper, "The Insurer's Role in Rehabilitation," has a rather interesting implication. I find that the word "role" means "a part played by an actor in a drama." That is an appropriate definition, because the rehabilitation of an industrial casualty is indeed a dramatic episode.

It is a drama in which the injured employee has the leading part, supported by an able and sizeable cast of characters. The Producer is Society; the Director is the Compensation Administrator. As the plot develops, certain tensions build up, certain conflicts appear that are resolved by cooperative action in a series of minor crises—all working toward the final climax—the return of the injured person to gainful employment—the culmination of the whole workmen's compensation process.

The insurance carrier is one of the supporting cast. It is my purpose to define "The Insurer's Role in Rehabilitation" as I see it, and then describe my own company's program to illustrate how we are trying to play our part.

Generally speaking, in workmen's compensation the quicker an injured employee goes back to work, the less his accident and any resulting disability are going to cost; the less they are going to cost anyone—the employee himself, the insurance carrier, the employer, and the public. Finally—in terms of headaches—the less they are going to cost the Compensation Administrator who is charged with the responsibility of supervising the whole procedure. Reasoning thus, it is obvious that the practical as well as the humane thing to do is to expedite return to work, and it follows that the best way to accomplish this is to offer the employee the best medical service that money can buy.

Let me go back a moment and approach this same point from a different direction—from the point of view of company policy. The objective of my company is to serve the public, and contribute to improvement in the social and economic welfare of this nation through the conduct of a sound, progressive mutual casualty insurance company. In pursuit of this broad objective, several policies have been evolved, one of which is to develop and actively promote programs for minimizing loss resulting from accident. One specific approach to such loss control is our Medical Service Program, the purpose of which is to return people to work. The method by which we propose to accomplish this is *promptly to put at the disposal of the employees of our workmen's compensation policyholders the best available medical service.*

The word "promptly" introduces the element of timeliness. The expression "put at the disposal of" is used advisedly because there is not, and in some jurisdictions there cannot be, anything mandatory about this. The language we have adopted makes it possible for us to operate harmoniously in free or directed choice situations. The word "employees" is not prefaced by any such modifier as "injured" or 'handicapped," because our program goes back to the very beginning and attempts to serve employees in the areas of original job placement and accident prevention where no injuries or resulting disabilities are involved. By the word "best," we mean just what it says in the dictionary—"most productive of good." And we use "medical" in its broadest possible sense so as to include physical and vocational restoration and all the other medical and paramedical procedures that may be needed to return the injured employee to the job best suited to his remaining abilities.

This is our conception of "The Insurer's Role in Rehabilitation"—a role that we regard not as a *right* that we may or may not *claim*, but as a *responsibility* that we *must fulfill* if we are to meet our obligations in workmen's compensation.

Our Service Program may be divided into eight parts and listed chronologically as follows: Job Placement, Accident Prevention, Medical Research, Medical Education, First Aid, Medical Service, Physical Restoration, and Vocational Restoration. This may be represented diagrammatically as a circular process that begins and ends with Job Placement. It may be helpful to keep this circle of services in mind as I go on to describe them, one by one.

It is our policy to encourage the use of preplacement physical examinations in industry, *provided* that they are used in an honest attempt to place the individual on a productive job that he can handle with due regard to his own safety

Presented at the Forty-second Annual Meeting of the International Association of Industrial Accident Boards and Commissions, Charleston, South Carolina, December 5, 1956.

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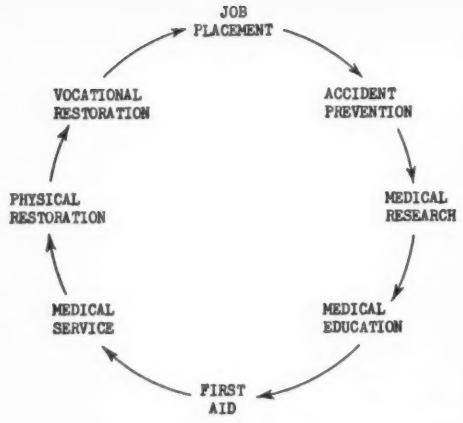

Fig. 1.
Workmen's compensation service program.

and that of others; and provided *further* that they are *not* used negatively as a bar to the employment of any qualified individual. It is, therefore, our custom to recommend such a program to our policyholders, and to assist them in setting it up and recording the results. Furthermore, in cooperation with our Engineering Department, we are equipped to provide technical assistance in job placement—the process of matching the physical abilities of people with the physical requirements of their jobs. The objective of this service is to make sure that the individual will be so placed that he will be safe within all predictable limits on both his first job and all successive jobs in line with his occupation. I believe this is what Mr. Gurske had in mind when, in the 1946 report of your Rehabilitation Committee, he used the word "habilitation" to describe the process of measuring an individual's capacity to fill the job and then training him to insure that the final fitting is complete.

Accident prevention is one of the primary objectives of workmen's compensation. Except for a situation where the responsibility of the insurance carrier may be defined by law, most companies participate voluntarily in this activity, there being no contractual obligation to do so. The reason for this is obvious, and points up the fact that the *best* rehabilitation is *preventive* rehabilitation; the *best* compensation is the accident that never *did* happen. I will not try even to touch on this subject in the time allotted, but will defer to my associates in the loss prevention departments of my own and other companies. Perhaps at some future meeting you might like to hear from one of them on "The Insurer's Role in Accident Prevention." It is a subject that deserves independent treatment.

There is probably no profession or occupation where there is a greater need for postgraduate education than the field of medicine. The medical picture is seldom static. Techniques change, develop, and improve at a rapid pace. Your Association recognized this fact in its Medical Committee report of 1949 when Dr. Galbraith, citing the need for more training of doctors in compensation medicine, said that "postgraduate education should be encouraged by commission-sponsored seminars, meetings, and bulletins, whereby advanced medical thinking can be brought more quickly to the general practitioners." With the part of our program that deals with research and education, we attempt to meet this need, in part, by developing and distributing medical information that will be helpful to industrial physicians and nurses. It is an effort to help them to do a better job in workmen's compensation and so expedite the return of injured people to their jobs.

A typical example of our activities in original research is our study of Industrial Low Back Pain, one of the most difficult problems we encounter. This project has been under way for some years under the professional direction of Dr. Joseph S. Barr and his associates at Harvard Medical School and the Massachusetts General Hospital. The results have been described by medical authorities as constituting a valuable contribution to an understanding of the subject. They have appeared in the medical literature, and have been distributed to thousands of physicians and other interested parties throughout the United States and Canada—distributed, I might add, without regard to insurance affiliation.

Another approach to this problem has been our Medical Education Program, consisting of 31 seminars in compensation medicine designed to improve the quality of our service. Starting back in 1939, these have been attended by hundreds of professional people in 17 major cities. They have been conducted by such professional men as Drs. Deaver, Oldberg, Caldwell, Marble, Kennedy, Holmblad, and many others who have contributed generously of their time and talents in order to do just what Dr. Galbraith had in mind. The minutes of these meetings have also been distributed to thousands of physicians and nurses who were unable to attend in person, and have appeared in the literature.

UP TO THIS point we have been discussing procedures that are undertaken and carried on *before* an accident happens—procedures that may be thought of as *preventive* rehabilitation. We now come to that part of our program that deals with medical or rehabilitation *treatment* in its more generally accepted sense.

It is our policy to encourage the establishment and maintenance of adequate first aid facilities and procedures among our policyholders. The reason for this is obvious—the quicker the rehabilitation process starts, the better the chance for

an early return to work. This is recorded in the Principles adopted by the American College of Surgeons—"Rehabilitation and restoration to gainful employment of the injured worker *must* begin with *first aid* and continue through the period of disability."

We believe that every industrial establishment, no matter how large or small, should have a first aid facility of some kind. Whether this is just a first aid kit or an elaborate clinic, it should be staffed by a competent individual—a *trained* first aid attendant or a registered nurse—and it should be under the supervision, direct or indirect, of a physician, preferably an *industrial* physician. To encourage our policyholders to conform to these generally accepted principles of industrial medicine, we make available to them a first aid service program designed to achieve the stated objectives. This service is provided by our own technicians who receive their training from our own Medical Department which, in turn, is under the direction of an industrial physician.

Next on our list is medical service—medical or surgical treatment in its more conventional limited sense—definitive medicine—the kind that back in the medical horse and buggy days was concerned with treating injury and disease. Now, however, in any rehabilitation program worth its name, it has assumed a place of leadership among a number of medical and other specialists whose *group* effort is directed toward treating the *whole* man in relation to his social, economic, and vocational—as well as physical—background. Rehabilitation is essentially a nondelegable *medical* responsibility. While it may be proper for the laymen on the team—you as administrators, we in the insurance business, and others—to participate and assume various functions of supervision and coordination, the fact remains that medicine is the *sine qua non* of the whole business. There is no part of a rehabilitation program where it is more important to insist on good medical care than right here at the beginning, right after first aid, where ultimate success or failure is most often predetermined. In the words of one of your ex-presidents, Mr. Nelson, "Effective rehabilitation must commence with steps to be taken almost immediately following injury. Without that treatment, physical restoration may be impeded or prevented. It can hardly commence too soon; it may easily commence too late."

We have approached this problem by attempting to surround ourselves with a group of several thousand of the best industrial physicians and surgeons that we can find. These are located wherever we do business and are made available to the employees of our policyholders in accordance with the provisions of the applicable law. This is a very informal association, but it is based on two rigid requirements from which we do not deviate. First of all, the doctor must be *competent*, an attribute that he must himself demonstrate in terms of *results*, not on the basis of his professional biography as it may appear in a medical directory. Secondly, he must be *cooperative*. He must *want* to be an industrial physician and he must share our interest in the job at hand, which is to return his patient to work as soon as possible and with a minimum of permanent partial disability. These doctors are all listed in our Home Office where their work is subject to constant checking and rechecking by our Medical Department. This association is fluid; it is changing all the time. The only thing that does *not* change is our insistence that these doctors must be oriented according to the well-established principles of Industrial Rehabilitation. This would appear to be, at least I hope it is, a nod in the direction of Jerome Pollack's idea of *competent* choice, the idea of removing the element of chance from compensation medicine.

Another arrangement that we have found to be indispensable in the operation of our program is the organization of teams of medical consultants that we have set up in all of our branch office cities. Made up of top-notch medical specialists and generally headed by an internist, these teams are put at the disposal of the attending physician to provide advice and consultation. The objective is to set up an individual rehabilitation plan for each employee—a plan with a future to meet his particular needs. The technique is to come to grips with the medical problem at the very beginning and *do* something about it—and not wait for a later date to call in the specialist as a *salvage* operation.

As a practical matter and a fortunate circumstance, the rehabilitation process is frequently completed at this point in our story. The injured employee receives whatever may be required in the way of first aid and definitive medical treatment, and then goes back rather promptly to the same or a similar job with the same employer. This is consistent with the fact that our program applies to all types of injury, regardless of nature or severity. The objective is the same in all cases; the same principles apply. The only difference is the degree of application of the various components. *All* of our workmen's compensation cases need *some* of the services that we are prepared to offer. A *few* of them need *all*. It is this smaller group of serious, difficult, major cases that I will now consider under the triple heading of Physical and Vocational Restoration and Job Placement.

The rehabilitation of this type of case—a long-drawn-out and difficult process in itself—is further complicated by the fact that no two are alike. Although the general approach can be standardized to a certain extent, we have found

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that each situation needs almost individual guidance. This is because human beings differ, and rehabilitation is a *human* undertaking. Therefore, we accept the responsibility of setting up a personalized rehabilitation plan—under medical direction—for each injured person, and then coordinating the activities of the many individuals and agencies that may become a part of that plan. This includes close and continuous liaison with the injured person and his family, his employer, and members of the medical and allied professions. This service is made available immediately after the accident to help the employee to solve the many social and economic problems that may result from sudden disablement. It is continued until the objective of job restoration is achieved, and is provided by our own specially-trained representatives.

To me, this is the modern approach to workmen's compensation claim handling, except that I am even inclined to want to dispense with the word "claim." Just as Arthur Larson proposed "that we change the name of the entire system from 'Workmen's Compensation' to 'Workmen's Restoration,'" so do I feel that there is no place for the world "claim" in the vocabulary of rehabilitation. The injured employee does not come to us as a *plaintiff* with a claim to be *adjusted.* Instead, he comes to us as the beneficiary of a piece of social legislation to which we are tied by contractual, financial, and public service considerations. In the language of your 1953 Administration and Procedures Committee report, what we are really trying to do is handle workmen's compensation "in the spirit of a welfare or public relations department instead of in the spirit of a combative claims or legal department."

IT IS WELL recognized that rehabilitation is a *group* effort, the operations of which are best brought into focus in a Rehabilitation Center. It is our practice to make use of local community facilities on a decentralized basis; i.e., on any particular case, we attempt to use the qualified center nearest to the point of origin. I am frequently asked whether we have, or intend to have, a Rehabilitation Center of our own. We do not—and there are several reasons for the position we have taken.

It is admitted that the number of facilities available for industrial rehabilitation is inadequate. We have, however, been able to locate, test, and approve a sufficient number of qualified centers to keep pace with the demands of our expanding program. It has been our experience that rehabilitation is best conducted at the qualified agency nearest to the employee's home, thus avoiding the psychological impact of travel far from the home environment. We feel that the expense of such travel should be salvaged and made available for the direct benefit of the employee in the form of actual rehabilitation therapy. We believe that in patronizing local centers we are meeting a public responsibility by contributing financially to their support—both in the form of grants and in the payment of fees for services rendered. Finally, we feel that our use of community facilities tends to encourage the building of more badly-needed centers—centers that will also serve the public in areas other than just *industrial* rehabilitation.

One of the more important members of the rehabilitation team is the original employer of the injured person—our policyholder. He is important because he is in a position to spell out the success or failure of any program by his assistance in job placement, the first and last one on our list of services.

In 1950, your Rehabilitation Committee reported that "it is much better to fit a workman, by rehabilitation, for the return to his old job than it is to concede too readily that he cannot be restored physically, with or without appliances and adjustments, for a return to his old job and, therefore, embark upon a program of 'vocational' training for another or a different job." By virtue of the close association that exists between the employer and the insurance carrier, the latter is in an admirable position to negotiate with the former as the easiest and most obvious answer to the problem of *re*-employment. It is our practice to work closely with the employer throughout the progress of any given case, to bring him into it at the beginning and keep him fully informed of developments. This makes it possible for him to anticipate the employee's return to work and prepare for any job adjustments that may be necessary. Also, it is vitally important that the *re*-employment potential of the original employer be determined as early as possible so that the rehabilitation plan can be set up and headed in the right direction.

While return to work for the same employer on the same or a similar job is the rule rather than the exception, there are, of course, cases where such disposition is impossible. There may be no jobs available to match the remaining physical abilities of the employee, or the employer may even have gone out of business. In these situations, we continue our efforts at job placement on our own or through outside agencies. We make full use of the placement services available at some of the rehabilitation centers that we utilize. We enjoy productive relations with governmental agencies—the Departments of Vocational Rehabilitation and the Employment Services—and we have found the JOB Committees in New York and Boston to be most helpful.

And so, we find ourselves back where we started—the employee back on *the* job best suited for *him* and our program poised to go into action again as needed.

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IN SUMMARY, I will simply repeat a statement that was made some time ago by the President of my company—a statement in which he expresses our attitude toward, and our belief in, rehabilitation as the back-bone of the workmen's compensation structure: "Rehabilitation is our business . . . . the business of helping injured men and women to return to their jobs.

"As a creed, rehabilitation stems from our conviction that the ultimate objective of workmen's compensation is the restoration of earning power. As a program, we think of it in terms of the sum total of the several medical and allied professional procedures that work to bring about this restoration.

"Our experience has demonstrated that a complete, integrated program of rehabilitation is the method by which we may best meet the responsibilities that we rightfully assume in the operation of workmen's compensation insurance —a responsibility to the injured person to return him to work as soon as possible so that he may maintain his economic status; a responsibility to the public interest to dispense medical and compensation payments judiciously so that the cost of industrial accidents may be controlled."

Closer Attention to Preventive Medicine

PROLONGED ILLNESSES strike over two million employees annually, cost $1.7 billion in productive time lost and $700 million for medical care. Chances are one out of 25 that an employee will be hit in 1957 by a prolonged illness (defined as at least four weeks' absence from the job). Chances are one out of five that he'll face this catastrophe sometime within the next five years. Hardest-hit groups are production line and experienced workers, whose skills can least be spared. Prolonged-illness absenteeism rises markedly with age, is greater among women workers than among men. These are the first nationwide estimates of extent to which prolonged illnesses cut into productivity, cause widespread economic insecurity. They are announced by the Research Council of Economic Security, Chicago, which has completed a five-year, $250,000 study of non-occupational illness, covering about 194,000 employees of 145 representative business concerns. How adequate are company sickness compensation and insurance programs? Survey reveals that chances are only a little more than half that cost to employee of his prolonged illness will be covered by company payments or by some form of insurance. Even where employers have sickness compensation programs, prolonged illness costs average worker (who is absent average of 10.8 weeks) about 13% of normal annual earnings. Although hospital and surgical insurance plans do "a pretty good job," they don't come to grips with major problem of prolonged illness, according to Leon Werch, Council's research director. Says Werch: "The average worker stays in the hospital only two weeks, but he's away from job for more than 10 weeks. We should re-examine our entire insurance program to see what package can be devised to cover the non-surgical, non-hospital costs of the average worker." Prolonged illnesses may become a major area of collective bargaining, says Werch on basis of discussions with the union and industrial sponsors of Research Council's study. Unions are likely to push for increased non-hospital and non-surgical coverage in health insurance programs. Presently, health insurance policy benefits meet 80% of hospital charges during prolonged illnesses, 61% of surgeons' fees . . . . but only 16% of other costs. Closer company attention to preventive medicine can help prevent prolonged illnesses, suggests survey report. Only about 36% of companies studied reported that they had some facilities for diagnostic tests in their Medical Departments. Only some 41% had physicians on their staffs. Only 14.5% had physicians as full-time personnel.

—From *Industrial Relations News*, April 6, 1957.

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Treatment and Prevention of Serum Sickness

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SERUM SICKNESS is the response of a hypersensitive person to the introduction of a foreign protein. Although the term might be extended to include the immediate anaphylactic reaction which represents the extreme example of hypersensitivity, it is generally applied only to the milder delayed allergic reactions. Serum sickness is characterized by a variety of symptoms, the most common of which are pyrexia, urticaria and other rashes, edema, and joint pains.

Severe reactions are not often encountered with modern sera, and the sickness usually lasts only about two days. The common delayed reaction usually occurs from six to 12 days after serum injection, but in patients who had previous injections an accelerated reaction may occur after an interval of three or four days. I have observed several patients who might be described as having had extremely accelerated reactions—the sickness manifesting itself in from four to 12 hours and being characterized by dyspnea, urticaria, and excitement. Each of these patients had shown a negative skin test.

Antihistamines[2,3] have been used successfully in the treatment of serum sickness, and have largely superseded the older symptomatic treatment. Recently, chlorprophenpyridamine maleate, one of the safest and most effective of these compounds, was made available in a sustained-release capsule.* This dosage form encapsulates hundreds of minute, variously coated pellets, and permits a gradual release of the drug over a period of eight to 10 hours.

The continuous 24-hour protection that is theoretically possible with these sustained-release capsules suggested the possibility that they might be valuable not only in treating serum sickness, but also in preventing it. Consequently, the following study was conducted to determine their prophylactic and therapeutic efficacy.

Methods and Materials

THIS study was conducted on 40 patients at the Union Market Clinic, Washington, D. C. The patients were given antitetanus serum because of injuries received in the course of their work, and for the purpose of the study were divided into two groups: 17 were treated for serum sickness therapeutically; 23 were treated prophylactically. The former group consisted of those patients who (with one exception) showed a negative reaction to the skin test; the latter, of those who (with one exception) showed a positive reaction. The positive reactant in the therapeutic group was included because of an almost immediate development of serum sickness — an example of what I have described as an extremely accelerated reaction. The one negative reactant in the group treated prophylactically had a history of a severe reaction two years previously, and was therefore included in this group. Penicillin was given to nine patients to control any infection that might result from the injury.

Both groups were treated with chlorprophenpyridamine maleate sustained-release capsules upon arising and at night. The dose varied slightly, but the most useful dosage was one 12 mg. capsule b.i.d. Additional antihistamines and intramuscular ACTH were used on six cases of severe reaction in the therapeutic group.

In the 17 cases of allergy to antitetanus serum, the reactions usually occurred about six days after the serum was given. However, in two of the patients serum sickness developed immediately, and in one after a lapse of 11 days. The patients suffered from symptoms ranging from mild local urticaria to severe urticaria, edema, and joint pains. Sustained-release chlorprophenpyridamine maleate therapy was begun at the onset of the reaction.

The 23 patients treated prophylactically were started on sustained-release chlorprophenpyridamine maleate at the same time the antitetanus serum was given. In 21 cases the dosage was 12 mg. b.i.d.; in two cases, 8 mg. b.i.d. In each case the medication was continued for approximately 10 days. These data are summarized in Table I.

Results

THE symptoms of serum sickness in the 17 patients treated therapeutically were usually controlled in one or two days following the oral administration of chlorprophenpyridamine maleate. Because of severe reactions, six of these patients required additional medication. Four were given

* 'Teldrin' *Spansule* capsule (Smith, Kline & French).

TABLE I.

SUMMARY OF SERUM SICKNESS THERAPY USING SUSTAINED-RELEASE CHLORPROPHENPYRIDAMINE MALEATE

Group	Number of Patients	How Treated	Time of onset of reaction to the serum	Work days lost	Duration of symptoms	Number of patients receiving other medications (Penicillin therapy not included).
1	17	Therapeutically	6 days (average)	14	Average 1.8 days	6
2	23	Prophylactically	No reaction in 20 patients. Mild reaction after 6 days in 3 patients.	0	12-24 hrs. (3 cases)	2

chlorprophenpyridamine maleate i.m.*; one, N, N-Dimethyl-N'benzyl-N' (alpha-pyridyl)-ethylenediamine**; and one, a combination of ACTH intramuscularly, and i.m. diphenhydramine hydrochloride.*** One patient was not asymptomatic until the end of the fifth day. It is important to note that all but one of these patients had a *negative* skin test. In this group, 14 days were lost from work as a result of serum sickness.

Of the 23 patients treated prophylactically, three developed mild symptoms of serum sickness. None of the three patients was ill enough to require his absence from work. In one patient the symptoms disappeared overnight; in two, within 24 hours. One of these cases did not occur until the patient failed twice consecutively to take the medication as prescribed. His symptoms remitted immediately upon resumption of treatment. Because this case can be considered atypical, it can be said that only *two* of the 23 patients treated prophylactically actually developed a serum sickness under this regimen. All but one in this group had a positive skin reaction.

There were no unfavorable reactions to the sustained release chlorprophenpyridamine maleate; mild drowsiness in one patient was the only side effect noted.

Comment

FROM these results it appears that the oral administration of sustained-release chlorprophenpyridamine maleate concomitant with antitetanus serum injections could be considered as a standard office procedure. Freed from the necessity of taking several doses a day, most patients can better be depended upon to be faithful to the regimen. The sustained-release capsule would seem to be particularly suited for use in industrial medicine, not only because of its convenience, but also because it provides prophylactic treatment that considerably reduces the amount of time lost from work. In the group of 17 patients treated therapeutically, 14 work days were lost as a result of serum sickness. In the group of 23 patients treated prophylactically, not a single day was lost.

Although the patients may exhibit strongly positive skin tests with antitetanus serum, if they are given chlorprophenpyridamine maleate starting at the time of the injection, only a small percentage show any reaction to the serum. On the other hand, when patients are given antitetanus serum alone they almost invariably suffer from serum sickness to some degree, even though they may have had a negative skin test. Sustained-release chlorprophenpyridamine maleate can be used successfully in the treatment of serum sickness which has already developed.

There is a widely held misconception that various sensitivity tests, notably the intradermal test, provide an accurate indication of a patient's relative sensitivity. This study, by demonstrating serum reactions in 16 patients who had negative skin tests, confirms the view of numerous investigators that there is no exact parallel between dermal and general hypersensitivity.[1] These findings, however, by no means minimize the importance of performing skin tests as a possible safeguard against anaphylaxis.

Summary

A STUDY was conducted on 40 patients to determine the efficacy of sustained-release chlorprophenpyridamine maleate as a prophylactic measure to prevent serum sickness after antitetanus serum injections; and as a treatment for already extant serum sickness.

The 40 patients were divided into two groups: one group (17 patients) was treated for serum sickness therapeutically; the other (23 patients) was treated prophylactically. The therapeutic group received b.i.d. oral doses of sustained-release chlorprophenpyridamine maleate starting at the onset of the serum reaction. The prophylactic group received the same medication starting at the time of the antitetanus serum injection.

The patients treated therapeutically usually responded to the treatment in one or two days; however, six of them required additional medication because of severe serum reactions. In the group treated prophylactically there were only two cases of serum sickness, both mild. There were no days lost from work in the group treated prophylactically, whereas 14 days were lost in the therapeutic group.

It is concluded that:

1. If sustained-release chlorprophenpyridamine maleate is given at the same time as the antitetanus serum, it is effective in preventing serum

* Chlor-trimeton maleate injection (Schering).
** Pyribenzamine (Ciba).
*** Benadryl hydrochloride (Parke, Davis).

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sickness, thereby reducing the amount of time patients would otherwise lose from work.

2. Sustained-release chlorprophenpyridamine maleate is also effective in the treatment of already extant serum sickness.

3. By eliminating the necessity of the patient's taking several doses during working hours, the sustained-release capsule is most likely to enlist his whole-hearted cooperation with the regimen.

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References

1. HARRIE, E. H. R., and MITMAN, M.: Clinical Practice in Infectious Diseases. Williams & Wilkins, 1947.
2. LAURENT, L. J. M., and PARISH, H. J.: 1952 Refresher Course for General Practitioners: Serum Reactions and Serum Sensitivity Testo. *Brit. Med. J.*, 1:1294, 1952.
3. MOYNIHAN, N. H.: 1955 Serum Sickness and Local Reactions in Tetanus Prophylaxis. *The Lancet* (2(6):264, 1955.

Elysium of the Aged

THE AGED in our population were not an economic or social problem in past generations since they were too few. Those individuals who did manage to survive into their 60's and who did not retire, managed to keep active at their work. There was no problem in their remaining active for two reasons: firstly, industrialization had not reached the present level in the last century, and secondly, the mores of the times accorded a substantial respect to age per se. In fact, a man's age was believed to be directly proportional to his competence — an old practitioner, of whatever art or science, was held in esteem since he had more experience in his work. The fact, that the longer an inept man works, the greater his experience in ineptness, was unfortunately not considered in the evaluation of an individual. The social matrix was an Elysium for the aged.

Today, an equally illogical rule applies: the aged are considered ipso facto to be undesirable in the industrial world. The status of such an indefensible notion becomes more deplorable as the age at which an individual is considered old is continually being lowered — 60 is old, 50 has become old, and today, many highly skilled individuals in their 40's find it difficult to locate employment due to age . . . .

A number of fanciful reasons are advanced by managements who consider the late 30's the age limit for hiring new employees. One of those is that men of over 40 cannot easily adjust to new surroundings. The fact is that a man in his early 30's has also formed his habit patterns — some individuals in their 20's can be quite rigid and difficult. Another fancy against employment of over 40 is, that they cannot long remain in a position since they are nearing retirement age. The fact is that with the shifting loyalties — especially in the upper brackets of income — a younger man is more likely to change jobs for advancement. Difficulty in accepting new employees into pension systems is given as another fanciful reason for not hiring men in their 40's. The fact is that a floating pension system easily overcomes that problem. Many are against the elasticity of the floating pension system, because it makes it easier for a man to change jobs without losing his pension. But it is apparent, that if a pension is the only hold that indentures a man to a job, such a man is not worth having. Higher salary requirements, reduced energy and other equally specious reasons are also advanced for restricting employment. On reflection it will be found that such reasons are devious and often spurious.

The realization that the reasons advanced against the employment of those over 40 are not reasons, suggests that they are probably not the true reasons; it causes one to inquire for the basic reason of that most unfortunate practice. We find too, that management of various firms which practice that limitation, privately admits that it does not actually know why it does so, except that it follows a trend. A number of firms, some of which are among our own clients, give *policy* decisions as a reason; yet the policy makers seem to be as unaware of the basic reasons for their policy, as those who execute it.

The real reason for limiting employment of those in their 40's is, therefore, essentially speculative. It would appear, and we speak conjecturally of course, that the fundamental reason resides in the adulation given to the activities of youth in war and in industry. The *young hero* is a form of speech. The *brilliant-young-so-and-so* is almost used as one word.

We do have a problem. That problem is in the fact that the mean age of our population is increasing. Owing to a longer life span, for which the pharmaceutical industry is also be thanked, the number of older people is growing. If we persist in refusing them employment we will be reducing the size of the market. With a shrunken market there will be less employment even for those in their 30's. With an ever-increasing cost of living and a decrease of employment of those in middle age we may be building the nucleus of a business recession.

Our markets for mass goods are in great measure comprised of the older wage earner. His very number is vast. In that light it would be ludicrous for example, for a firm to make goods for the so-called senior citizen, while at the same time refusing to hire executives in their 40's.

Obviously there are occupations in which individuals in their 20's and 30's — rather than those in their 50's — are physiologically better fitted. One example is airplane pilots as reflexes and acuities decline with age. But a place must be found for those who are not suited by age, to pilot an airplane. They contributed to the size of our markets and to the integrity of society as a whole. Nonetheless, it is bizarre to find that the airlines do not hire pilots over a certain age limit while aircraft makers sell small private planes for executives in their 50's to fly on their business trips. Where is the Elysium of old pilots?

From the *Monthly Bulletin* of DiCyan & Brown, Consulting Chemists, No. 59, November-December, 1956.

Evaluation of Grip Loss

A Factor of Permanent Partial Disability in California

Summation and Conclusions of the Subcommittee for Study of Grasping Power of the Committee on Industrial Health and Rehabilitation of the California Medical Association

JOHN E. KIRKPATRICK, M.D., Subcommittee Chairman
San Francisco

UPON review of the medical literature on injuries of the hand, it was noted that scarcely a line has been written concerning the problem of evaluation of loss of grasping power. The only complete report that has been published to date on this subject is a paper by Barritt.[1] The only other reference found in the recent literature on the use of an instrument for measuring grasping power is the report of the Subcommittee for Standardization of Joint Measurements in Industrial Injury Cases contained in a book titled "Evaluation of Industrial Disability" which was compiled by Thurber.[2] In this book a pneumatic dynamometer is mentioned, a picture of the Geckeler dynamometer is shown, and the subject of grasping power is briefly discussed.

At present there are only three types of instruments available to determine comparative loss of grasping power between the injured and normal hand. The Geckeler dynamometer is a pneumatic instrument which depends upon the compression of a column of air by means of a conventional rubber bulb, such as is used on a blood pressure cuff, to propel air into a gauge which registers the increase in air pressure produced by pinching the bulb. At one time there was an idea that a blood pressure cuff could be rolled up and inflated and that a comparative determination of grip could be obtained by having the patient squeeze the partially inflated cuff. It was found that differences in basal starting pressures could produce almost any kind of reading, and that bounce by a quick jerk could squirt the mercury or dial hand through its entire range and give completely abnormal and improper readings. Barritt stated that the use of the blood pressure cuff in the taking of grip measurements was not acceptable.

The Collins dynamometer, sometimes called the Misdom-Frank, is an oval spring device which depends entirely on compression of a steel spring registering the amount of compression of the spring through gears which activate a pointer on a dial. The oval spring on this type of dynamometer is not made with uniform or calibrated resistance and consequently a wide variation in comparative figures can be obtained with different instruments, no two being alike insofar as resistance is concerned. Some of the instruments have a spring so weak that the comparative result is of no practical value because it offers so little stimulus to the grasping effort, and in some the spring is so strong that the resistance causes the patient to balk at applying his best efforts. Another fault frequently encountered is that the edge of the spring gouges into the soft tissue of the hand to the extent that it causes pain even in an uninjured hand, which keeps the patient from gripping his best. Some investigators have padded the spring with sponge rubber, which has helped to reduce the gouging effect.

The third type of dynamometer uses a sealed hydraulic system which registers force in pounds.

Sanderson[3] described quite correctly the difference between measuring grip pressure and grip force as follows:

"It is important to emphasize that force and pressure are two widely different physical items. Pressure is the measure of an intensity of force over an area. The wide difference between force and pressure is well illustrated by the simple experience of standing on the floor on one foot, then stepping on a marble, and finally, for extreme emphasis, upon the point of an upwardly protruding nail. Exactly the same force is involved in each case. The weight is the weight of the stepper. In the first case the weight is supported by the area of contact with the entire foot and the pressure is approximately 60 pounds per square inch depending upon the weight of the stepper and the size of his foot. The pressure in the case of stepping upon a half-inch marble is approximately 760 pounds per square inch for a man weighing 150 pounds. The same man stepping on a moderately pointed nail, the diameter

Presented before the Section on Industrial Medicine and Surgery at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956. Reprinted by permission from *California Medicine*, 85:5, 314 (November) 1956.

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of the point equal to 1/50 of an inch, will feel a pressure of approximately 478,000 pounds per square inch. The latter far exceeds the strength of the tissue and accounts for the failure of said tissue and the penetration of the nail into the foot. The important point to understand is that pressure is force divided by area. In the above illustration the same force was involved in each case but the pressure varied from approximately 60 pounds per square inch to 478,000 pounds per square inch, solely because of the effect of the change in area of contact.

"Precisely, this is the same relationship involved in measuring grip. It is impossible to measure grip correctly by measuring pressure. A small hand or hand having amputated fingers having a moderate grip would develop a large grip pressure. A large hand, having the same useful grip as far as the ability to perform manual work is concerned, would develop a small grip pressure because the same force is spread over a large area. To employ grip measurement as a mark of ability to perform manual labor is a scientific, objective approach to the quantitative measurement of physical ability. It is important, therefore, that grip force be employed and not grip pressure.

"Devices which measure grip pressure by squeezing a bulb filled with fluid, liquid or air, or one of the common spring dynamometers, can only measure the pressure of grip. Grip can only be measured by a force-measuring instrument.

"An instrument measuring grip must respond to the force of the grip, only. Such an instrument would be properly called a Grip Dynamometer. It must not be influenced by the area of contact between the hand and the instrument. So long as the grip is the same it must show the same reading whether the squeezing hand has one or more fingers missing or whether the hand is large or small. It must show the same reading and the same value of grip upon repeated trials regardless of the person who makes the observation.

"Therefore, the basic physics of grip measurement should be summarized as follows: (1) Grip is a force. (2) Grip is not pressure. (3) The measurement of grip must be in force units such as the pound or the gram."

Five or six years ago Sanderson manufactured several instruments of the kind he advocated, and he has persistently tried to perfect them, but to date such instruments are not being manufactured in any quantity.

The sealed hydraulic system instrument which this Committee studied is the (Bechtol)[4] Jamar dynamometer, completely remodeled and perfected to the extent that its sealed hydraulic system is as nearly leakproof as any mechanical appliance can be made. It is equipped with a sensitive gauge which is calibrated in pounds per square inch (pounds force), and there is a recalibrator on the face of the gauge for adjustment if any minor change in the pressure should occur. The handles are effectively shaped to fit the hand, made of aluminum, smoothly sandblasted, for comfort, and light weight. When the instrument is grasped, only a small fraction of an inch of motion is required to register the maximum reading of 200 pounds, an isometric feature.

The original Jamar grip tester was the result of three years' study by an engineer and an anatomist with the counsel of four eminent orthopedic specialists. Recently Asimow[5] re-engineered and improved this instrument, retaining the isometric principle and a hydraulic system sealed under vacuum. It is now being manufactured in quantity.

The Council of the California Medical Association in October, 1954, authorized Packard Thurber, Sr., M.D., Chairman of the Standing Committee on Industrial Practice, to appoint a Subcommittee to study and evaluate various grip measuring devices and problems concerning measurement of grasping power. Following are the names of the members of the Subcommittee he appointed: John E. Kirkpatrick, M.D., San Francisco, Chairman; J. L. Barritt, M.D., San Francisco, Medical Director of the Industrial Accident Commission, State of California; Paul Beddoe, M.D., Medical Examiner, Industrial Accident Commission, Los Angeles; and A. W. Hoaglund, M.D., Medical Director, Pacific Indemnity Company, Los Angeles.

Appointed as Advisory Members of this Subcommittee were: Eli Welch, Supervisor, Permanent Disability Rating Bureau, Industrial Accident Commission, San Francisco; Jerry Crowley, Permanent Disability Rating Specialist, Industrial Accident Commission, Los Angeles; Packard Thurber, Sr., M.D., Ex-officio Member, Los Angeles.

The first meeting of this Subcommittee was held on December 10, 1954, all members being present. The program of study was outlined and the Committee then agreed that several Jamar instruments should be supplied to the Medical Departments of the Industrial Accident Commission in San Francisco and Los Angeles for trial use by their medical examiners in order to make a study of the comparative value of the several dynamometers in current use for the determination of loss of grasping power. The Council of the California Medical Association on April 3, 1955, appropriated the money to supply several of these instruments.

On June 1, 1955, S. W. McDonald, Chairman of the Industrial Accident Commission, approved a survey study to be made of the different types of dynamometers used in Commission cases by the several physicians in the Medical Bureau—

J. L. Barritt, M.D., Paul Beddoe, M.D., Gerald F. Doyle, M.D., William H. Harrison, M.D., George Jones, M.D., Sam Kerlan, M.D., and Ben Sharpton, M.D. They made comparative tests over a period of five months.

The opinion of each of these examiners was studied at the next meeting of the Subcommittee which was held in Los Angeles on December 2, 1955. The entire Subcommittee was present. Also, Jerome Shilling, M.D., Chairman of the Committee on Industrial Health and Rehabilitation of the California Medcial Association, was present in an advisory capacity. At this meeting it was decided to put the conclusions of the Subcommittee into the form of an instructive article on the evaluation of grip loss.

The next meeting of the Subcommittee was held on February 10, 1956, in Los Angeles. All members and advisory members were present. An outline of the paper that had been recommended at the preceding meeting was presented. Drs. Barritt, Beddoe and Thurber, and Messrs. Welch and Crowley collaborated and contributed to the article outlining the evaluation of grip loss.

Evaluation of Grip Loss in California

Loss of grasping power is a ratable factor of permanent disability in California. The Industrial Accident Commission desires that dynamometer readings of both hands be given in all examinations of an upper extremity made for rating purposes.

Ratings are based on the percentage of grasping power actually lost as a result of the injury being reported upon. In estimating this percentage the uninjured opposite hand is used as a basis for comparison. In most persons, however, the grip in the major hand is stronger than that in the minor. The Industrial Accident Commission has assumed for reasons of expediency, that the grip is 10% greater in the major hand.

The determination of grip loss based on dynamometer readings is made as follows:

	Injured Major		Uninjured Minor
Average of three dynamometer readings	70		100
		(10% greater in major)	10
		Add	10
		Estimated Normal ...	110
		Major actual grip ...	70
		Loss	40

40/110

(Gives 36% grip loss in major hand.)

The factors which most frequently result in loss of grasping power are: (1) amputation; (2) limited motion of hand, wrist, elbow, or shoulder; (3) pain; (4) muscular weakness.

A careful evaluation of these factors will usually give the examiner a general idea regarding the grip loss which may be expected. It would be an extremely rare case in which only one factor contributed to grip loss, but for purpose of discussion it is assumed that the cause indicated is the sole cause.

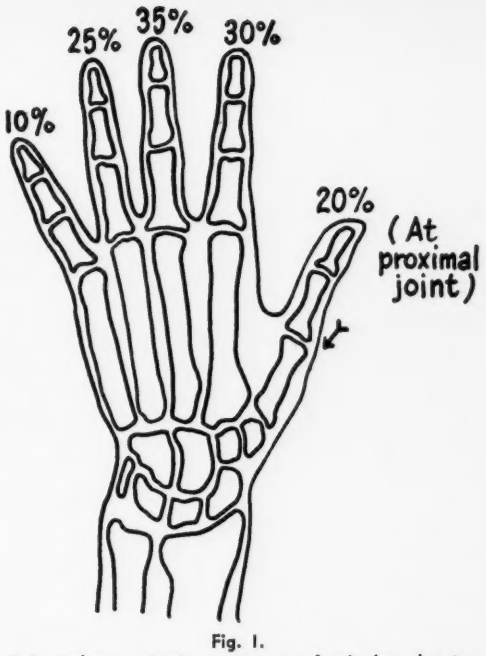

Fig. 1.
Estimated approximate percentage of grip loss due to amputation of entire finger. For partial loss of any finger: approximate loss at middle joint — 3/4 value of finger; approximate loss at distal joint — 1/5 value of finger.

1. *Grip Loss Resulting from Amputation.*

Fig. 1 illustrates the loss which is approximately that found following amputation alone.

Grip loss in cases of amputation will be increased if such factors as pain, limited motion, tender stump, scars, incoordination and muscular weakness are associated.

2. *Grip Loss Resulting from Limited Hand Motion.*

Evaluation is best made by considering the distance which the fingertips miss the mid palm in flexion. This distance should be reported in all hand injuries, preferably on the standard form supplied for the purpose by the Industrial Accident Commission (Fig. 2).

It is impossible to estimate grip loss resulting from limited motion with any degree of accuracy.

ESTIMATED APPROXIMATE GRIP LOSS DUE TO LIMITED MOTION

Fingers	Misses Mid Palm Over Two Inches	Misses Mid Palm Two Inches	Misses Mid Palm One Inch	Misses Mid Palm One-half Inch
Index	30%	25%	15%	5%
Middle	35%	30%	20%	5%
Ring	25%	20%	10%	5%
Little	10%	10%	5%	0

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The table shows rough approximations of grip loss to be considered by the examiner to determine if the case is ready to be rated.

With certain limitations of motion, a person may have a normal grip for large objects and yet have a complete loss of grip for small objects. The dynamometer readings in these cases will depend on the type of dynamometer used to some extent. If a dynamometer is used which has an adjustment mechanism to permit varying the span of the grip, the setting should be the same for each test of both hands and should be stated in understandable terms.

3. *Grip Loss Resulting from Pain.*

In California, grip loss that is a result of pain* is just as ratable as loss due to amputation or other pathologic condition. Grip loss may result from pain in the hand, the wrist, the elbow, and even the shoulder. When pain is a factor in grip loss, care should be taken to be sure that the condition is ready for rating. It should be emphasized that in many cases of injury to the hand, rating is decided upon much too early.

4. *Grip Loss Resulting from Muscular Weakness.*

Muscular weakness existing at the time a case is ready for rating is usually associated with atrophy, and measurements of girth of arm and forearm of both injured and uninjured extremities are necessary in every rating report. Most persons doing active work have a greater girth on the major side. This difference in girth may vary from none at all in the case of frail female clerical workers, to $\frac{7}{8}$ of an inch in husky males in certain trades. Equal bilateral measurements of girth in active persons usually indicate atrophy of the major side. A small decrease in girth on the minor side usually does not mean atrophy.

INDUSTRIAL ACCIDENT COMMISSION
ROUTINE UPPER EXTREMITY MEASUREMENTS

Circumference Biceps R. 10" / 10½" Wrist ... / ...
Forearm R. 9½" / 10" Hand ... / ...
(Inches)

Motions: inj/uninj.(*)

Shoulder: Abd. ... / ... Forearm Pron. ... / ...
Flex. ... / ... Sup. ... / ...
I R. ... / ...
E R. ... / ... Wrist D F ... / ...
Ext. ... / ... P F ... / ...
Add. ... / ... R D ... / ...
U D ... / ...

Elbow: Ext. ... / ...
Flex. ... / ...

Hand: - - R. Major

		Proximal	Middle	Distal	Finger tips miss palm: inches Prox.	Mid.	Dist.
Thumb	(Ext		XXXXXXXX				
	(Flex		XXXXXXXX				
Index	(Ext		R. 170/180	R. 165/180			
	(Flex		R. 90/110	R. 40/70	1½"	1"	¾"
Middle	(Ext						
	(Flex						
Ring	(Ext						
	(Flex						
Little	(Ext						
	(Flex						

EXAMPLE

Thumb: (Abd. ... / ... (degrees)
(Add. Tip misses head of 5th MC. ... / ... inch

Grip (dynamometer readings)

Inj.	Uninj.
96 /	105
92 /	95
94 /	100
Average 94	100

Grip loss 16/110 = 15% grip loss.

* In case of bilateral disability state estimated normal as Abd. 140/160 (estimated normal 180).

Key to abbreviations:
Abd. = Abduction
Flex. = Flexion
I R. = Internal rotation
E R. = External rotation
Ext. = Extension
Add. = Adduction
Pron. = Pronation
Sup. = Supination
D F = Dorsal flexion
P F = Palmar flexion
R D = Radial deviation
U D = Ulnar deviation
MC. = Metacarpal
inj. = Injured
uninj. = Uninjured

MEASUREMENTS NOT SHOWN ARE CONSIDERED NORMAL

Form M-38A (NEW 11-38)

Surgeon executing blank sign here

Fig. 2.

*The Industrial Accident Commission has adopted the following recommendations and definitions of subjective disability:

Subjective disability can best be evaluated by: (1) a description of the activity which produces the disability; (2) the duration of the disability; (3) the activities which are precluded and those which can be performed with the disability; (4) the means necessary for relief.

The following definitions were developed: (1) a severe pain would preclude the activity precipitating the pain; (2) a moderate pain could be tolerated, but would cause marked handicap in the performance of the activity precipitating the pain; (3) a slight pain could be tolerated, but would cause some handicap in the performance of the activity precipitating the pain; (4) a minimal pain would constitute an annoyance, but causing no handicap in the performance of the particular activity, would be considered as nonratable permanent disability.

5. *Grip Loss from Weakened Extensor Mechanism.*

It should be borne in mind that before an adequate grip can be made, there must be a preliminary fixation of the extensor muscles. Without this preliminary fixation, there can be no normal grip. This is a not infrequent cause of grip loss following tenosynovitis and following certain injuries to muscles and nerves.

6. *Dynamometers.*

The evaluation of grip loss is a medical problem involving many factors. The dynamometer is only one of the methods by which grip loss is evaluated. There is at present no type of dynamometer which will show exactly what the grip loss is.

Grip readings taken by means of a sphygmomanometer cuff or bag are believed to be very inaccurate and are not acceptable to the Industrial Accident Commission.

Two subcommittees under the sponsorship of the California Medical Association have studied the dynamometer problem. No machine has as yet proved to be entirely satisfactory. At present, the Jamar* dynamometer is being studied. Preliminary tests have shown it to be apparently a very good machine. The machine certainly warrants further study and may prove to be the most satisfactory of any available thus far for general use.

Any dynamometer must be used with intelligence. Some of the factors which may make dynamometer readings invalid are: (1) pre-existing injury to the extremity being examined; (2) pre-existing injury to the opposite extremity, making it unsuitable for grip comparison; (3) failure of the patient to cooperate or to put forth his best efforts; (4) confusion as to which is the major hand; (5) inadequacy of the dynamometer itself.

7. *Reporting Grip Loss.*

Premature attempts to establish a rating for any injury cause inconvenience to the employee, the employer and the Industrial Accident Commission.

Physicians reporting on upper extremity industrial injuries can do much to prevent financial hardship to the injured workman and the employer by giving careful attention to the matter of grip. The importance of this will be realized when it is noted that complete grip loss in the major hand of a carpenter 60 years of age amounts to a pecuniary consideration of $7,560.

If the examiner feels that the grip loss as shown by the dynamometer reading does not indicate the actual grip loss due to injury, he should so state. He should in addition give his own estimate, in percentage, of what he feels the actual grip loss is. (Refer to items 1 and 2 of this report.) He should state the reasons for his opinion.

The examiner should do this only after a careful evaluation of all the factors which may have caused grip loss. He should substantiate his opinion with complete measurements of both upper extremities. He should describe the original injury, if he has not already done so, as well as the course and duration of treatment and the end result.

Such statements as, "The knuckles do not blanch," and "The forearm muscles do not tighten," are not given much consideration. If there is no ability to grip, then blanching and tightening can hardly be expected to be present. On the other hand, any one can simulate tremendous effort without making any actual grip.

The following should be reported in every upper extremity examination, made for rating purposes: (1) dynamometer readings of injured and uninjured sides; (2) girth in inches of both arms and both forearms; (3) complete comparative measurements of each joint of the extremity, unless it can be stated that measurement has shown the joint range to be equal to the opposite normal; (4) distance in inches which the finger tips miss the mid palm; (5) a description of any pre-existing grip loss of the injured extremity; (6) a description of any pre-existing grip loss of the opposite extremity, together with the examiner's estimate of what the normal grip should be (Fig. 1); and (7) a statement regarding which is the major hand.

The upper extremity form* has been found by the Commission to facilitate the reporting and rating of upper extremity disabilities. In addition it saves the examing physician's time during the examination and when reporting his findings.

In conclusion, this Committee unanimously agreed that the physical principle of the pounds force type of dynamometer is more acceptable than the principle of the pressure types of dynamometers for the quantitative measurement of grasping power; and furthermore, this Committee unanimously agreed to recommend the new Jamar dynamometer as the most acceptable instrument manufactured at this time, bearing in mind that with progress in engineering some better method or instrument may be developed to study more accurately comparative grasping power.

(516 Sutter Street)

References

1. BARRITT, J. L.: Injuries of the Fingers and Hands — A Review of Cases from the Standpoint of Compensation. *Calif. Med.*, 83:366 (November) 1955.

2. THURBER, PACKARD, SR: Evaluation of Industrial Disability. Industrial Injury Cases, pp. IV, V, VII, Oxford University Press, New York, 1950.

3. SANDERSON, H. C.: Personal communication, December, 1954.

4. BECHTOL, C. O.: The Use of a Dynamometer with Adjustable Handle Spacings. *J. Bone & Joint Surg.*, 36A:820, 832 (July) 1954.

5. ASIMOW, M., PH.D., Asimow Engineering Company, 10958 Wellworth Avenue, Westwood Village, Los Angeles 24, California.

*The Jamar dynamometer may be purchased from Asimow Engineering Company, 10958 Wellworth Avenue, Westwood Village, Los Angeles 24, California.

*The upper extremity Form M-35A can be obtained from the Industrial Accident Commission, San Francisco, by request to Dr. J. L. Barritt, Medical Director.

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Vitamin B_{12} in Acute Subdeltoid Bursitis

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IN 1953,[1] the author reported six cases of acute subdeltoid bursitis which were treated with large doses of vitamin B_{12} (1000 mcg. per dose). Relief was rapid; x-rays revealed absorption of the calcium deposits. Since then, 40 additional patients have been treated successfully, sufficient to indicate that such use of vitamin B_{12} is an effective therapy in acute subdeltoid bursitis.

This newer material is presented as clinical observations only, without any attempted postulations as to the metabolic functions of B_{12}. No less, the author has been influenced by the investigations of Unglaub and Goldsmith[2] on the subject of folic acid and vitamin B_{12}. From their report the following items are extracted: "Vitamin B_{12} and folic acid both seem to be essential in the synthesis of nucleoproteins, although apparently at different stages of the process. . . . It seems certain that vitamin B_{12} is of importance in the metabolism of nervous tissue, although the mechanism of its action is not known. . . . There have been no reports of toxic reactions to the intramuscular administration of doses that far exceed those that are useful therapeutically. . . . Vitamin B_{12} has been used as a therapeutic agent in a variety of conditions other than the megaloblastic anemias. Its most widespread application has been in the therapy of a variety of neurological disorders including toxic, diabetic, alcoholic, and nutritional neuropathies, trigeminal neuralgia, and miscellaneous primary degenerative diseases of the central nervous system. Vitamin B_{12} has proved effective in relieving the pain of trigeminal neuralgia in a significant proportion of patients. The usual dosage is 1 mg. or more daily, given intramuscularly."

The following selected cases are presented for consideration:

CASE NO. 1. An executive was found baking under an infrared lamp during a prolonged heat spell in the summer of 1955. He had been placed there by the nurse, at his own request. He had had a stiff and painful left shoulder for several days, and stated that generally he attained relief by getting a "bake." Clinically, he presented the typical signs of an acute subdeltoid bursitis—pain and marked restriction in abduction of the shoulder, plus tenderness over the bursa. This patient, however refused to have an x-ray taken and did not react favorably to the suggestion of instituting a series of vitamin B_{12} injections. When he returned three days later, he was in marked pain. He stated that he had had a miserable week end, that he stopped after several holes of golf because of the severe pain and inability to raise his left arm. After his uncomfortable week end, the patient agreed to the procedure originally outlined and treatment with injections of vitamin B_{12} was begun. X-rays taken revealed an appreciable amount of callus in the subdeltoid bursa (Fig. 1). He experienced relief within a few hours after the injection of vitamin B_{12}. This relief continued steadily. Within five days, he was symptom-free. He was able to abduct his arm above shoulder level as compared to a 15% range of abduction on his first appearance. Interim x-rays, taken six weeks later, showed a definite absorption of callus (Fig. 2). There has been no return of symptoms and restoration of function has been complete.

CASE NO. 2. This case is presented because the patient was seen within hours after the onset of

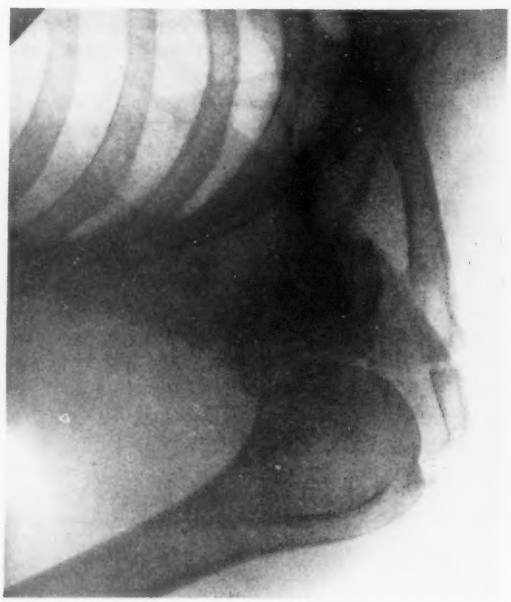

Fig. 1.
Case No. 1—August 8, 1955.

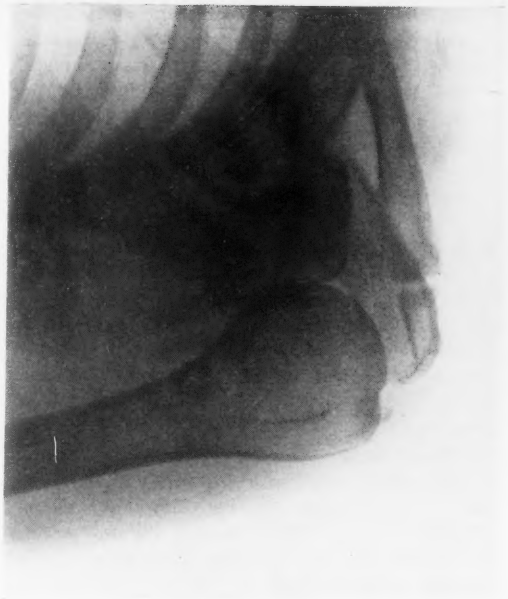

Fig. 2.
Case No. 1—October 3, 1955.

Fig. 3.
Case No. 2—August 12, 1955.

symptoms. Originally, he suffered a severe laceration of his thumb while out of town on a business trip, and had been sutured by a local physician; he appeared at my office for redressings. During one of these appearances, he casually mentioned that he had pain in the right shoulder of which he had become aware at six o'clock that morning. This pain became increasingly worse and motion of the shoulder more limited as the day wore on. He asked whether this pain in the shoulder might be connected with the thumb injury. He was advised that there was no relationship. Examination revealed pin-point tenderness over the subdeltoid bursa and marked restriction in motion of the shoulder. He was immediately given an injection of vitamin B_{12} and x-rays were taken. These showed a large calcium deposit (Fig. 3). Symptoms continued to increase in intensity until about 10:30 that evening (eight hours after the first injection). From that point on, there was progressive relief so that within less than 24 hours, this patient was quite comfortable and within a matter of another day, pain disappeared altogether. Follow-up x-ray taken October, 1955, (Fig. 4) shows absorption of callus. X-rays taken December, 1955 (Fig. 5) indicated much more absorption.

Fig. 4.
Case No. 2—September 30, 1955.

CASE NO. 3. This patient, a secretary, happened to be in a position to compare the various modalities used for the treatment of calcified bursae. Her evaluation of treatments seemed objective. Originally, in 1952, this patient developed a pain in the right shoulder and appeared for treatment three or four days later. X-rays showed calcification of the subdeltoid bursa. She was put on a course of deep x-ray therapy and, after an initial exacerbation following the first treatment, began to feel relief within a week. As far as the right shoulder is concerned, she has been asymptomatic since. About 10 months later, she complained of pain in the left shoulder. A diagnosis of bursitis was confirmed. This time, she was given cortisone, orally. Relief followed within several days, and for the following three years, she was asymptomatic. In September, 1955, she returned

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Fig. 5.
Case No. 2—December 1, 1955.

complaining of severe pain in the left shoulder. Abduction was limited to about 15° and pain was severe. She stated that this was at least as severe, if not more so, as the pain she had had on prior occasions. Vitamin B_{12} injections were started immediately; x-rays were taken the same day. These showed a large area of calcification adjacent to the greater tubercle. She obtained relief that same night and claims that the rapidity of recovery was more pronounced when compared to the other modalities used. Clinically, she was able to abduct her arm fully within several days. The full course of treatment, however, was given and her symptoms disappeared completely.

Comment

AN APPRECIABLE number of cases of calcified bursae presenting acute symptoms principally of the shoulder (but also including the hip—three cases, and elbow—one case) have been successfully treated with large doses of vitamin B_{12} in accordance with the schedule described. This method has a number of advantages. The relief of subjective symptoms begins rapidly, sometimes within a matter of hours. Absorption of calcium deposits follows. No target area is necessary; the injections are given parenterally in the following dosage: Daily doses (1 cc. = 1000 micrograms) for seven to 10 days. Three times a week for two or three weeks. Thereafter, one or two a week for two or three weeks, depending upon clinical indications. There are no local or general reactions. There are no contraindications to its administration in cases of blood dyscrasias. It is an economic form of therapy as compared to deep x-ray exposures and treatment with hormone derivatives.

Summary

FORTY patients suffering from acute bursitis were treated with large doses of vitamin B_{12} with gratifying results. The simplicity of administration, the virtual absence of side effects, and the results obtained merit further clinical trial and controlled study.

NOTE: Since submission of the foregoing article there have been at least 10 added cases. The reactions to B_{12} were most favorable. Two professional colleagues who tried this method on several of their cases reported satisfactory results. In the author's capacity as Medical Director of a Casualty Insurance Company recommendations (by written communication) were made to a number of physicians located in various parts of the country to try this modality before instituting their requested radical procedures. Several accepted the suggestion and reported good results. Others of course, rejected the suggestion forthwith. Over five years have lapsed since the first trial. The excellent results obtained in all but two or three cases would seem to justify the use of vitamin B_{12} in cases of calcified bursitis.

(60 Hudson St.)

Citations

1. KLEMES, I. S.: Use of Vitamin B_{12} in Treatment of Acute Subdeltoid Bursitis. *Indust. Med. & Surg.*, 22:352 (August) 1953.

2. UNGLAUB, G., and GOLDSMITH, G. A.: Folic Acid and Vitamin B_{12} in Medical Practice. *J.A.M.A.*, 162:623, (June 16) 1956.

Executives Healthy

DON'T turn down top executive promotion for fear of an early grave, says American Management Association. According to a recent survey, men in top spots in industry as a group have a lower than average mortality rate. This finding is corroborated by the fact that life insurance companies sell policies to men in executive or higher-level occupations in general at the lowest premium level. "These affirmations that business executives do on the whole enjoy average health are reassuring, but, as doctors are quick to point out, 'average' health is not good enough," the study said. It credited the improved health of executives to increasing practice of periodic health examinations for executives as well as "rank and file" workers.

—From *Trenton, N. J., Trentonian*, May 9, 1957.

Anxiety Reaction: Signs and Symptoms

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Madison, Wisconsin

A CONSIDERATION of the signs and symptoms of anxiety encompasses a broad segment of the practice of medicine. Anxiety is, to some extent, a factor in almost every illness and may significantly influence its course and outcome. The major feature of all psychoneurotic disorders, regardless of whether they are manifested psychically or as disturbances of bodily function, is excessive and sustained anxiety. An increasing amount of evidence exists to indicate that anxiety may play a causative role in a large number of specific diseases, some of which, such as essential hypertension, peptic ulcer, ulcerative colitis, hyperthyroidism, and angina pectoris, may be disabling and life-threatening. Thus any physician who practices medicine is continually dealing with the problem of anxiety in a variety of forms. Whether he does this well or badly depends upon (1) his ability to recognize anxiety and its protean manifestations; (2) his ability to reconstruct from a study of a patient's history, personality, attitudes, and patterns of dealing with various life situations, the factors responsible for the development and persistence of the anxiety; and (3) his ability to assist a patient in learning a more flexible and satisfactory manner of dealing with his environment, or otherwise to resolve the factors responsible for his anxiety.

Anxiety is in itself a symptom; it may provoke a wide variety of secondary symptoms which may or may not be accompanied by physical signs. There is a certain range of anxiety which is an entirely normal reaction to various life-threatening situations, and an essential asset for the protection and survival of the organism. Under appropriate circumstances, it may increase effort, efficiency, and alertness. Usually it is proportional to the significance of the provoking stimulus, and it subsides with reasonable promptness when the stimulus is withdrawn. Each individual has a characteristic pattern of anxiety, both in its emotional and physical manifestations. Consequently the limits of what would be considered normal anxiety are quite broad.

Morbid anxiety, however, has a much more complex significance. It is a state of excessive, frequently inappropriate, and sustained anxiety which has undesirable and often devastating effects upon the mental and physical health of the individual. When present, it indicates that the individual, with his characteristic personality and attitudes, is ineffectively and unsuccessfully dealing with his environment or certain life situations, whether he is aware of it or not. It may have its origin in intense insecurity, or frustration, or restrained anger or resentment; it may be provoked by the demands and threats arising from the individual's environment. In the majority of instances, it is the result of an unresolved conflict which arises sometime during a person's life. In some cases, the conflict exists at a conscious level and can be defined by the patient. More often, because of its unpleasant and threatening nature, and the existence of elements not acceptable to the individual's concept of himself, the conflict has been repressed into the unconscious. Either way it persists as a source of anxiety of varying intensity, which to the individual may be more harassing and threatening than the conflict itself. It is seldom that these details are apparent when such a patient presents himself to a physician. Occasionally one will be confronted by a chief complaint of uncontrollable and overwhelming anxiety. Much more often, however, a physician will be called upon to treat a symptom or group of symptoms suggesting some type of disturbance in bodily function. In such cases the early establishment of a proper diagnosis may depend upon the ability of the physician to recognize these symptoms as manifestations of an underlying anxiety reaction.

CLINICALLY, there is a group of symptoms which seem to occur with remarkable frequency in the chronically anxious patient. They may be primary or secondary features of the history but, whenever they are present, they carry significant implications. Actually, they may be the only accurate indices of the patient's emotional status. However, they are often misinterpreted and inappropriately treated.

Among these, chronic weakness, asthenia, and easy fatigability are especially common. Their emotional origin is suggested by the inconsistency of their relationship to exertion or to the pattern of an organic illness. They characteristically appear in association with periods of emo-

Presented at the Sixty-Ninth Annual Meeting of the AMERICAN ASSOCIATION OF RAILWAY SURGEONS, April 9-11, Chicago.

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tional stress and relate more closely to what is demanded of a patient, or to his emotional reaction to a situation, than to the physical energy he expends. Clinically they may be expressed in several patterns. The patient may "feel worn out all the time," "too exhausted to do anything," or "unable to do more than the bare essentials." Especially characteristic is asthenia or lassitude which is present upon arising in the morning. Gradually, during the day this subsides so that by evening an acceptable state of well-being is experienced. Such patients say, "I get up feeling more tired than when I went to bed; it takes me several hours to get going." When investigated further, it becomes evident that these patients find the problems of the day unpleasant and anxiety-provoking, and they hesitate to face them. But, as the anticipated threats pass, they seem to acquire a growing sense of security and confidence, which permits a reduction in their tension and apprehension. In other patients who are chronically fatigued, the appearance of symptoms invariably follows periods of unpleasant or anxiety-provoking stress, with which they find it difficult to cope. Thus the overprotected, immature, insecure, and excessively dependent young woman, who seeks to have a child after her marriage because of some idealized concept of motherhood, may become chronically fatigued after the child is born simply because she is inadequately equipped emotionally to deal with the continual, unpredictable, and often frustrating demands of the young infant. While she may be unaware of her inadequacy, these stresses become the source of mounting anxiety, of which, in a regressive pattern of reaction, fatigue becomes the chief manifestation. Many other similar examples are seen daily in every practicing physician's office. In general, the anxious patient who is tired or weak is so because he is tense, disinterested, bored, unwilling, or frustrated in obtaining his goals.

Sudden, recurrent episodes of weakness or giddiness, often accompanied by cardiac palpitation, paresthesias of the face and extremities, tightness of the chest, difficulty in breathing, sweating, or trembling, are likewise common. These may appear whenever a patient undertakes or sometimes simply contemplates some type of activity. Occasionally the initial symptoms may become progressively severe and terminate in a syncopal episode. These episodes are readily reproduced by a test period of hyperventilation and upon close scrutiny of these patients' respiratory mechanics, it becomes readily apparent that they frequently spontaneously hyperventilate, usually in association with emotionally stressful thinking or activity. Other frequent manifestations of hyperventilation are sudden pain in the chest of varying degrees of severity, usually located in the upper anterior portions or along the costal margins, periodic abdominal pain, cramping of leg muscles, and even carpopedal spasm.

Persistent insomnia, in the absence of pain, respiratory difficulty, or other bodily discomfort, is another frequent manifestation of anxiety. Sometimes it may be the earliest manifestation. People who build up excessive tension in the course of the day's activities find it difficult or impossible to relax upon retiring, and then frequently augment their difficulty by worrying and fretting over the problems and uncertainties of the day just passed or of the oncoming day. Occasionally associated with the sleeplessness are such symptoms as itching or paresthesias, sweating, muscle cramping, and the so-called "restless legs syndrome." Almost equally common is a tendency to awaken unnecessarily early in the morning. This "morning insomnia" is a classic symptom of depression; however, it also occurs in anxious people who awaken early with an exaggerated sense of readiness and apprehension in the face of the threatening and unpredictable events of the forthcoming day.

MANY anxious patients complain of disturbances in gastrointestinal function. The psychodynamic patterns of obesity, peptic ulcer, cardiospasm, nervous vomiting, including the vomiting of pregnancy, and the irritable bowel syndrome, have been well documented. In less clear-cut gastrointestinal somatization reactions, changes in the eating habits of an individual may be significant. An impairment of appetite, the acquisition of new or the accentuation of old food idiosyncrasies, or a sudden gain in weight along with an increased desire for food may suggest the existence of underlying anxiety. Especially significant is a loss of appetite for breakfast. Sometimes a patient will even become nauseated at the sight of food for several hours after arising. This occasionally happens in expectant fathers whose pregnant wives are completely asymptomatic. At other times, patients will awaken with hunger but will experience satiety or nausea after a few bites of food. Later in the morning, the usual adequate appetite returns, and the remaining meals of the day are well tolerated. This pattern, like that of morning asthenia, with which it is often associated, reflects an excessive amount of anxiety and tension which is maximal upon arising. This frequently has its origin in a feeling of uncertainty over one's ability to deal successfully, in terms of efficiency or time, with the various responsibilities of the day.

Probably the most classical of all emotionally induced or psychosomatic illnesses is the migraine syndrome. Old as our knowledge of this syndrome is, with its characteristic headache and nasal, ocular, and gastrointestinal symptoms, it is remarkable that its emotional origin

has not been recognized until relatively recent times. Even today this is repeatedly overlooked. One of the reasons for this is that the efficiency, dependability, and superficial personality characteristics of the migrainous persons are such as to conceal the anxiety, frustration, and resentment with which they actually operate.

For example, a 39 year old married woman had had classic migraine since the age of 13 years. The frequency of headaches had increased to three weekly. This woman appeared to be the typically prompt, well-groomed, businesslike, and completely capable migrainous person. She efficiently managed her home, supervised her three children, and was prominent and active in civic and church affairs. As her responsibilities had increased, she had found it necessary to work for 12 to 14 hours daily. In spite of this, she had continued to accept additional responsibilities, and indicated that she had never turned down a request for her services. As a child, she had been taught a "true Christian way of life" by an ambitious, domineering, uncompromising, migrainous mother. The essential feature of this was that it was expected she should make every possible effort and personal sacrifice in order to please and meet the demands of other people. She had had no choice but to accept it and had subsequently struggled to conform. She had never even considered any other way of life.

She expressed strong concern over her ability to meet the expectations of other people, her increasing frustration in the face of her growing responsibilities, and finally, with much reluctance and uneasiness, her great resentment of the demands of other people and especially of her rigid mother. When satisfied that there were equally Christian, more realistic, and less exhausting ways of living, she promptly set out to revise her own. She limited her responsibilities and daily activities, discarded the maternally enforced standards and established those of her own, became less concerned with what other people thought, and found it increasingly easy to say "No." As she was able to accomplish these things, her headaches rapidly subsided in frequency and severity, and during the past seven years she has had but two headaches.

Other types of periodic headache, pain or aching in the muscles of the neck, back, chest or extremities are prominent presenting complaints of chronically anxious patients. Such symptoms are prone to occur when an individual is driving himself too hard physically or mentally, is operating under excessive pressure or responsibility, or is forced to restrain aggressive or hostile impulses which he has accumulated. Especially common are recurrent aching and tightness in the posterior cervical muscles, interscapular or lumbar backaches, and migratory muscular and periarticular pains which superficially suggest rheumatoid arthritis. Many of these are diagnosed as chronic fibromyositis, or, when joint symptoms predominate and are associated with some transitory swelling of joints, as "palindromic arthritis," but actually the vast majority of them are again but manifestations of the patient's underlying emotional status.

CHEST pain, so alarming because of its implication of heart disease, is often a manifestation of spasm, or excessive tension, in the intercostal or pectoralis muscles, or both. In addition, as pointed out earlier, it may be produced by sustained hyperventilation. Upon careful evaluation, the pattern of this type of pain is not that of coronary insufficiency, and, in the majority of cases, one can confidently conclude that the problem is emotional and not cardiac. However, this is not always the case. Some patients presenting this symptom are by nature aggressive, hard-driving, compulsive, and basically anxious individuals who meet their growing responsibilities with an increase in tension and pace. Frequently their symptoms appear when the demands upon them have caused them to curtail or discontinue their previous athletic and recreational activities. While their initial symptoms may relate entirely to the skeletal muscles of the chest, it is not unusual for them to return several years later with bona fide coronary insufficiency, and one cannot help but feel that their manner of dealing with the problems and responsibilities of their lives has been of significant influence in the course of events. Thus, when one first treats these individuals in their early symptomatic period, the necessity for adequately coping with the emotional problem which exists takes on even greater importance.

Several years ago a survey of the symptoms and signs presented by a large group of emotionally disturbed patients disclosed a high incidence of complaints referable to the shoulder and arm. Usually these symptoms suggested a subacromial bursitis or a tendinitis in the musculotendinous cuff of the humerus, but occasionally, a marked similarity to a scalenus-anticus syndrome or a shoulder-hand syndrome was present. Upon more careful investigation, it was found that these symptoms had developed in close relationship with the existing emotional disorder, had responded poorly to the usual therapeutic procedures for bursitis and tendinitis, and were not completely relieved until the accompanying emotional disorder was resolved. Actually, there is reason to believe that in a large percentage of cases of bursitis of the shoulder the disease develops in excessively tense, anxious people as the result of the accentuated vulnerability of the pectoral girdle produced by increased muscle tension.

Finally, it has been shown clearly that the

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emotional and psychic symptoms in the female and so-called male menopause are not manifestations of the normal physiological endocrine changes which are taking place, but instead are due to the difficulties these individuals are having with the environmental problems and life situations which confront them at this particular period of life.

THE PHYSICAL signs which may accompany an anxiety reaction usually are not as revealing as the symptoms. Some patients by their very manner and appearance reveal their underlying emotional status. Others seeks to conceal their feelings beneath a well-studied and rehearsed facade of calmness and complacency. One is always suspicious of the patient who is too anxious to deny any problems or stresses, or to assure his good adjustment and emotional stability. This defensiveness on the part of a patient is an unfortunate and all-too-frequent circumstance, for it makes it difficult, if not impossible, for the physician to reconstruct and comprehend the nature of the existing emotional disorder, and it forestalls the institution of the treatment the patient so badly needs.

The signs of autonomic instability accompanying anxiety are well known. To these might be added excessive sweating, hyperventilation, frequent sighing, and excessive smoking. When tension headaches are present, there is usually tenderness of the muscles of the skull and neck. Likewise other skeletal muscles are tender in the presence of symptoms relating to them. Usually during the course of a physical examination a physician is able to evaluate a patient's threshold for painful and other unpleasant stimuli. The anxious patient is prone to overreact to even the slightest amount of discomfort.

The presence of any of these manifestations of anxiety should prompt a physician carefully to investigate the life and personality of the patient, so that the nature of the emotional disturbance which exists can be disclosed and understood. The problem must be apparent before appropriate therapy can be instituted. The current increased emphasis upon the emotional factor in disease has not only required a physician to have a broader knowledge of psychiatry, but it has also necessitated a change in his concept of the significance of physical symptoms. Such attention to the significance of symptoms cannot do other than improve a physician's diagnostic acumen. This is very much in order since the large majority of emotionally induced illnesses are not properly diagnosed for from two to three years after the appearance of the initial symptoms. The period of time before appropriate psychotherapy is instituted is even longer.

IN THE FACE of present-day standards of medical practice, these shortcomings deserve every physician's most serious attention. It is essential that he become as proficient in the diagnosis and treatment of emotional disorders as he is in the organic diseases, not only when they exist independently, but also when they are combined.

The most effective treatment of an anxiety reaction or any psychoneurotic disorder is, of course, the resolution of the conflicts or personality disorder which set it going. Attractive as the potentialities of the tranquilizing drugs are, they are incapable of accomplishing this, and thus laborious and time-consuming as psychotherapy is, it is the only effective manner of treating emotionally ill people. Effective psychotherapy for a large number of patients is often accomplished by their better understanding the nature of their symptoms and themselves as well. In the face of the apparent increase of emotionally-induced illness, it is clear that the responsibility for treatment of the majority of these disorders will rest on the general practitioner and internist.

(1300 University Avenue.)

Can't Be Taxed

SICK BENEFITS paid employees under company health insurance plans can't be taxed by Federal government, U.S. Supreme Court ruled 6-2 this week. In case growing out of 1949 benefits paid by Southern Bell Telephone & Telegraph Company to one of its Atlanta employees, high court held that employer disability benefit plans are subject to same tax exemption as commercial health insurance payments made to workers. Government has argued that telephone company's plan was not "health insurance," but a "wage continuation plan," since employees paid no fixed premiums and amount and duration of benefits varied with length of service. Although U.S. Circuit Court of Appeals in New Orleans accepted government's case, Supreme Court stated that the "payment of premiums in a fixed amount at regular intervals is not a necessary element of insurance."

—From *Industrial Relations News*, April 6, 1957.

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Humble Oil and Refining Company

Recipient of the 1957 Industrial Health Conference Award for Health Achievement in Industry

"A Medical Department contributes to the operations of the company it serves if it improves the health, both mental and physical, of employees and management; if it decreases absenteeism from work; if it helps reduce the number of accidents; if it evaluates and promotes healthful work places; and if it thereby makes happier and more efficient employees."

—V. C. BAIRD, M.D., Chief Physician

The Medical Division

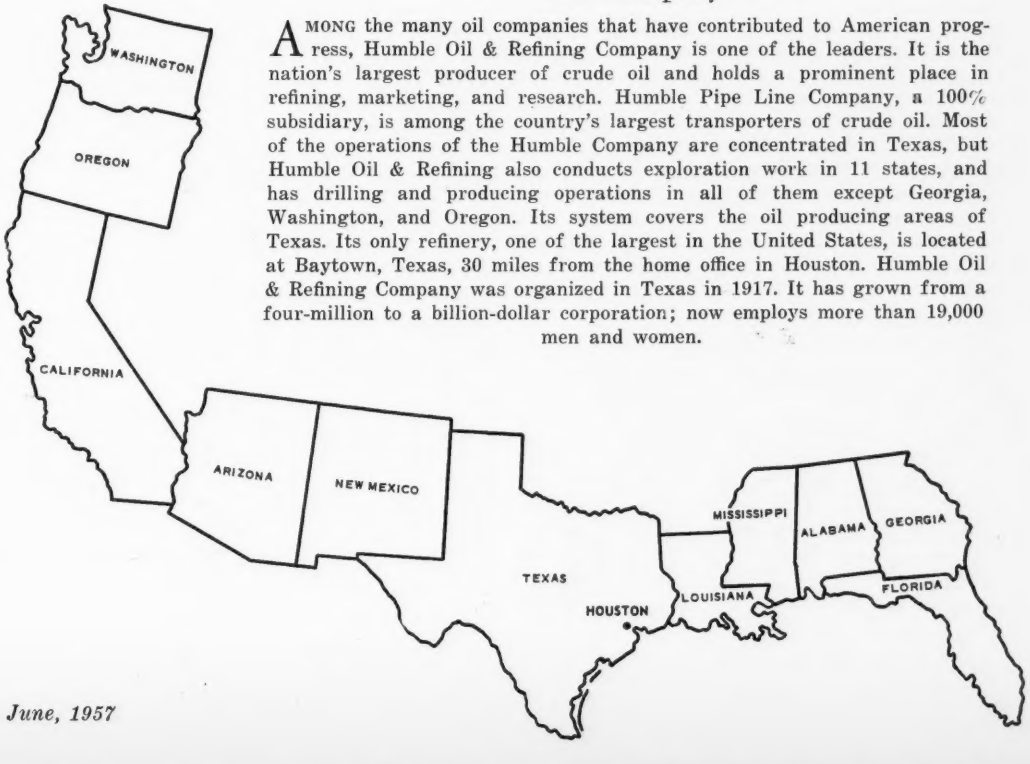
HUMBLE management has always regarded the health of its employees as a matter of primary concern. Through the years, it has been the policy of the Humble Companies to maintain a competent, adequately staffed and fully equipped Medical Division to be of service to employees in encouraging good health by:

1. Promoting sanitary, healthful working conditions.
2. Providing, when requested by individuals, information and counseling on health matters.
3. Conducting pre-employment medical examinations and making recommendations concerning proper placement.
4. Conducting medical examinations of employees who handle potentially toxic materials or who may engage in hazardous occupations, and making available to management information, professional advice, and research in the fields of toxicology and environmental health.
5. Offering medical examinations at intervals on a voluntary basis to all employees.
6. Cooperating and consulting with employees' private physicians concerning health problems of employees.
7. Cooperating with local and national industrial health organizations and public health agencies in improving general health standards.

In carrying out these functions, Humble's Medical Division maintains confidential medical records on all employees and respects the confidential nature of their personal medical infor-

The Company

AMONG the many oil companies that have contributed to American progress, Humble Oil & Refining Company is one of the leaders. It is the nation's largest producer of crude oil and holds a prominent place in refining, marketing, and research. Humble Pipe Line Company, a 100% subsidiary, is among the country's largest transporters of crude oil. Most of the operations of the Humble Company are concentrated in Texas, but Humble Oil & Refining also conducts exploration work in 11 states, and has drilling and producing operations in all of them except Georgia, Washington, and Oregon. Its system covers the oil producing areas of Texas. Its only refinery, one of the largest in the United States, is located at Baytown, Texas, 30 miles from the home office in Houston. Humble Oil & Refining Company was organized in Texas in 1917. It has grown from a four-million to a billion-dollar corporation; now employs more than 19,000 men and women.



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Counseling on Health Problems

mation. The Division is not, and does not wish to be, a substitute for the family doctor; it merely supplements his work in keeping the individual well and happy.

Beginnings and Growth

THE beginning of the Company's Medical Division may be traced back to 1919, when Dr. Charles M. Aves was employed as Chief Physician to set up medical facilities and a staff at Baytown Refinery. From that time to the present, the staff has grown to include 10 full-time physicians, 12 nurses, five laboratory technicians, two industrial hygienists, and an office force, under the supervision of a trained medical office administrator, large enough to handle the great volumes of records, statistics and paper work necessary to serve the more than 19,000 employees.

Medical headquarters are now situated in Houston, under the direction of Dr. V. C. Baird, Chief Physician since 1944. At both Houston and Baytown, modern and completely equipped clinics and laboratories are maintained. At both locations, facilities and staffs have been continuously enlarged and improved to give more and better medical service to a larger number.

Means are also provided to extend medical services to field employees removed from Houston and Baytown by use of a Mobile Medical Unit, and about 300 physicians who have been designated as "company-appointed physicians" by the Chief Physician to do work for the Company on a fee basis. This service usually takes the form of pre-employment examinations, special examinations, or the care of industrial accidents.

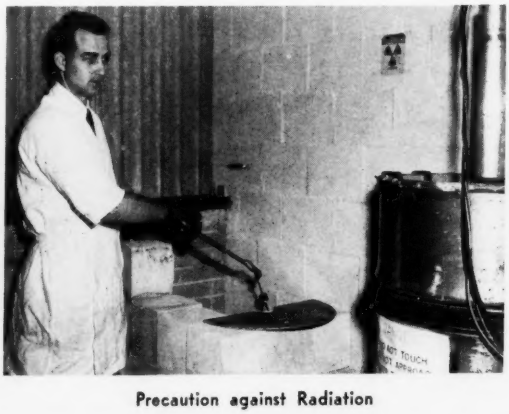
A Unique Position

THE success of an industrial medical program depends upon a receptive management. Fortunately, the Humble Companies have such a management; consequently, Humble's Medical Division enjoys an enviable position as the medical arm of a large corporation.

Working under the Employee Relations Department with such divisions as Personnel, Safety, and Annuities and Benefits, the Medical Division is a service group responsible directly to top management. Medical Division personnel are asked to speak to and to serve on various Company committees where the health and welfare problems of employees are discussed. Management, on the other hand, is invited to participate in various community health committees and programs. Both of these help provide management with a thorough understanding of employee and community health problems.

Chief Physician Dr. Baird has developed a close, personal working relationship with members of the Board of Directors. A mutual education process between his Division and management, Dr. Baird believes, is chiefly responsible for his group's recognized effectiveness as an industrial medical unit. "We strive," says Dr. Baird, "to represent the concept of the old country doctor, who was concerned with the total mental and physical welfare of his patient. We, too, are interested in the whole man—his family, his relationship to his fellow workers and to his community. Ours is not merely a pill and needle operation. A great deal of our work is helping

Reception Room



Precaution against Radiation

people know about the one thing they most often take for granted—their health."

Employee Acceptance Good

IN ADMINISTRATING the Company's seven-point medical policy, Dr. Baird and the Medical Division have found that veteran Humble employees are extremely well informed on and interested in the Medical Division and proud of the wide services it offers them. Newer employees ask questions such as:

(1) What medical services will it provide me?

Answer: After an initial thorough pre-employment examination, an employee is eligible for periodic medical examinations; and he is encouraged to ask for help from the staff, in the way of advice and counsel, on any personal health problem. In Houston, Baytown, Katy and Midland, assistance is provided for employees who become ill while at work.

(2) How can I get those services?

Answer: Any such help, within the limits of the Division's staff and its facilities, are his for the asking. If he lives in or near the Houston-Baytown area, it is rather easy for him to be examined by, or obtain medical advice and counsel from, one of the several staff physicians. If he lives too far away to be conveniently served by either Baytown or Houston, he may schedule a medical examination to coincide with a future meeting he will attend, or a visit he will make there. He may also avail himself of the services offered by Humble's Mobile Medical Unit the next time it comes into his area.

(3) How do such services fit in with the work of my family physician?

Answer: An employee's family doctor, like his church, should always be a matter of his own personal choice. The staff of the Medical Division works *with* the family doctors. Medical Division findings and reports are available to him, with the employee's consent. Continued treatment for nonindustrial illness is not, however, provided by the Company.

Emphasis on Prevention

THOSE who make up Humble's Medical Division have always followed the course of prevention and health promotion. They are not content merely with correcting a situation; they plan and work ahead, as far as possible, to protect employees by anticipating problems and endeavoring to avoid them.

In recent years, much thought and effort continue to be devoted to the study of medical statistics of groups of employees according to age and occupation. Thus the Division is able to find out more about the stresses and strains, the health problems, and the mental and physical pressures that afflict various age groups and those engaged in certain occupations. Using this information as the basis for counseling, the Division staff can help people achieve a prolonged, useful, productive, and happy life span.

Industrial Hygiene Laboratory

Communicable diseases are being replaced by chronic and degenerative conditions as a major cause of sickness. Even so, such common causes of absenteeism as diarrhea, headaches, the common cold, and related disorders are being examined critically, to determine how suffering and lost time can be reduced.

Diseases of the heart and vascular system—especially vital to older age groups, but important to all—are coming in for much study and effort. In some cases, these diseases are being detected far enough in advance (through examinations and checkups) to do something about them before they become really dangerous. Similar work is being done on liver and gallbladder conditions, on diabetes, the kidney, the lungs, and the genitourinary system.

Industrial Hygiene

INDUSTRIAL hygiene work, as provided by Humble's Medical Division, is another important phase of the effort to prevent trouble before it can gain a foothold.

Humble's industrial hygienists are engineers, scientists, investigators. "In the field of industrial health," says James Hammond, industrial

Testing

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Dispensary

hygiene engineer, "my job corresponds to the general practitioner in professional medicine. It would be impossible to specialize in air or water pollution, toxicology, ventilation, or acoustics. We must devote time, study and practice to all of these, and more."

Working spaces are checked where trouble may lurk, especially where potentially dangerous chemicals or other materials are used as a part of daily routine. Employees engaged in such work are checked at periodic intervals to safeguard their health. Careful checks are maintained on air and water, to prevent pollution; noise levels and radiation exposures are being studied in the interest of employee well-being.

The industrial hygiene program also extends into field communities where, in conjunction with the Civil Engineering Division, water and sewage disposal systems are carefully checked. The industrial hygienist also advises on insect and rodent control, and counsels on good practice in the use of herbicides and insecticides.

In recent years, Humble industrial hygienists have even had a chance to test their sea legs. The oil man, relentless in his search for hidden petroleum, has gone into the swampland of Louisiana, up uncharted bayous—even miles offshore into the Gulf of Mexico. The industrial hygienist went along—to set up standards for such things as good sanitation and ventilation.

As an example of the emphasis on preventing a problem before it happens, the Company's industrial hygiene engineer was recently asked to advise on a wax solvent offered for sale to Humble for use in its oil wells. The product proved it would do an excellent job, but it was too dangerous, chemically, to the men who would have to use it. As a result of his study, this product was not recommended, and the Production Department chose another.

Treatment

Humble is as health-conscious about the things it sells as it is about the things it buys. Since it markets many products in addition to gasoline and oil—such as paints, varnishes, household and industrial products—a strict program is maintained to prevent the sale of any product that might be injurious to a customer.

One fertile field for industrial hygiene in the Company's operations is Baytown refinery. Here are to be found all the elements that challenge the hygienist's resources and skills. Here are complicated refining processes using all sorts of acids, caustics, and other chemical compounds; the potential trouble-makers of heat, cold, and fatigue; the dusts, gases, paints, and sprays which could cause much trouble if not held in check.

With the industrial hygiene staff working through the supervisory and safety groups to hold a tight rein on all these materials and working conditions, any one of which could cause trouble if unguarded, work at Baytown refinery goes forward with an amazingly low accident and injury rate. The figures themselves prove that *the employee is far safer inside the refinery than he is at home!*

To arrive at that situation, significant work has been done by management, acting on the advice of all staff groups, at Baytown as well as in other operating sectors of Humble. Industrial Hygiene Engineer Hammond sums it up this way: "This job holds little glamour. The success of our work cannot be measured in big newspaper headlines about the lives we save with daily, routine work. On the contrary, we gauge our achievements in the *absence* of headlines."

Clinic on Wheels

AS AN extension of the medical service, a Mobile Medical Unit was designed and put into operation by the Company in 1948. Under supervision of a full-time physician and an x-ray technician, this traveling unit makes it possible to offer periodic physical examinations to employees in the field. A complete, compact clinic-on-wheels, the Mobile Medical Unit makes routine tours of Humble's operating territory from Florida to New Mexico. It visits Production Department and Pipe Line Company employees in field camps, sales personnel in Texas cities, and exploration crews.

As in the case of all physical examinations, the service of the unit is wholly voluntary; a

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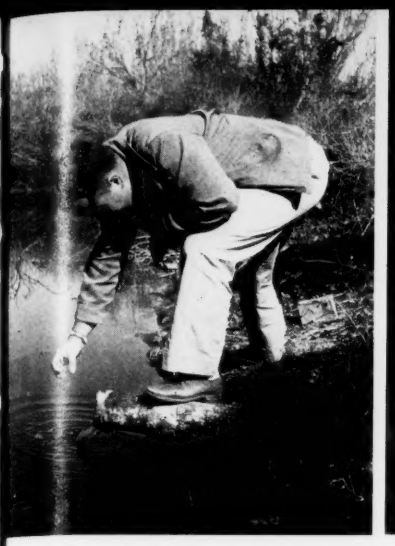


Sanitation

Ventilation Control

Mobile Unit Interior

complete examination with laboratory studies is made and its results are given to the employee, and to his family physician if requested by the employee. All records and conversations are personal, confidential, and professional.

Like their associates in Baytown and Houston, the physician and technician traveling with the Medical Mobile Unit perform examinations and counseling only. If a problem is found, the patient is referred to his own physician for treatment.

With an over-all truck-trailer length of 44 feet, Humble's Mobile Medical Unit is one of the largest built. Every inch of its space is carefully utilized. The trailer is divided into three sections. A small laboratory is equipped to perform types of tests not often available near field camps. The x-ray section has complete x-ray equipment, dark room for developing, fluoroscope, electrocardiograph, and eye-testing machines.

The doctor's examining room is equipped with desk, examining table, and sterilizers. All equipment is installed to withstand road shock. The trailer has its own transformers which enable it to tie in to electric power wherever it stops. It is fitted, of course, with electric lights, refrigeration, air conditioning and heating equipment.

In nine years, the medical van has travelled more than 30,000 miles; more than 13,765 employees have completed examinations within its narrow walls.

Health Education

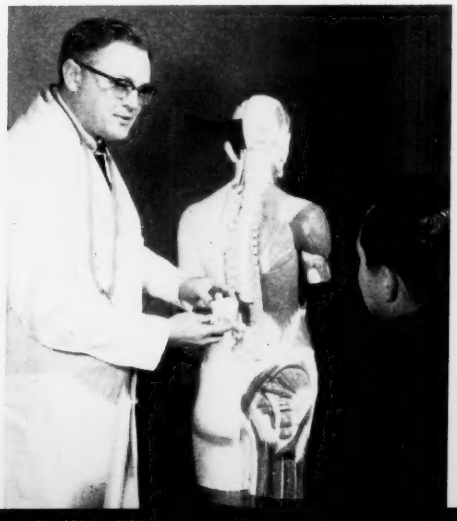
HEALTH education is an essential function of Humble's industrial health program. It supplements and assists the many services and facilities provided in other phases of the program. The educational approach has succeeded in helping employees understand the importance of good health and stimulating in them a desire to improve their own health practices.

Excellent opportunities for health education are afforded when employees visit the Medical Division for examination. Counseling on personal, family, Company, and community health problems can best be done when the employee's problem is closest to him. Humble's Medical Division is conscious of this opportunity and takes the time adequately to perform this activity. Aids, such as exhibits, manikins, models, pamphlets, pictures and other similar media, assist in answering employee's health problems.

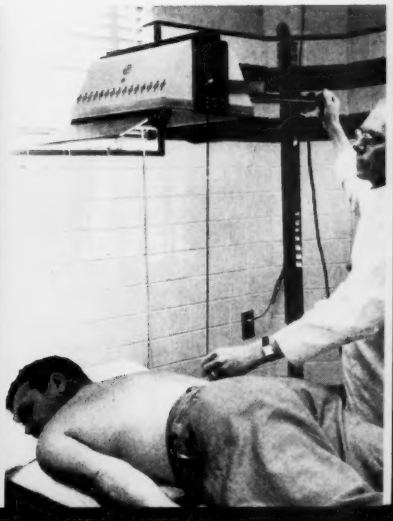
Reading material, such as library books, maga-

Complete Medical Records

Health Education



Physiotherapy



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Audiograms

zines and pamphlets, is available for employees to read while waiting in the reception rooms, or personnel offices, or to check out for reading at home. Books are previewed by members of the staff and cover a wide range of health topics.

The Medical Division has found supervisory personnel, in daily contact with employees, to be of invaluable assistance in health education. Working closely with employees, they are able to make suggestions about protection from environmental health conditions, to encourage constructive health habits, to urge employees to avail themselves of voluntary health examinations, to advise about job adaptations or modifications, and to do a degree of counseling. Health talks at safety meetings, at supervisors' meetings, at new employee orientation sessions, or at training courses are typical examples. Movies and talks on selected health subjects are presented to Humble employees in the field by means of the Mobile Medical Unit.

Through various Company magazines, newsletters, circulars and bulletins, the Medical Department promotes health education by timely articles, notices, program or service descriptions, drawings, pictures, and editorials. Prepared literature on many general health subjects is readily available for distribution.

In addition to the employee, industrial health education by Humble's Medical Division is directed toward its management, the communities in which it operates, and toward its professional colleagues in the field of practicing medicine.

Professional Activities

IN ADDITION to their other work, the Medical Division's staff of physicians, hygienists, nurses and others are professionally active in furthering the cause of health in towns and cities where Humble people live. Encouraged by progressive management, they serve on civic health projects and in professional societies and organizations.

Personnel in the Medical Division also hold teaching assignments at Schools of Medicine, nursing, and the universities. Humble staff members have been prominent in the planning and teaching of Postgraduate Courses on Industrial Health presented by the University of Texas Postgraduate School of Medicine, Conferences on Industrial Hygiene of the University of Texas and Texas A. & M., and the Nursing Seminar held at Baylor University College of Medicine.

An outgrowth of these has been the development of the Texas Section, Industrial Medical Association, and the Committee on Industrial Health of the Texas Medical Association. Humble physicians have been instrumental in organizing and promoting the programs of these professional organizations—in numerous cases serving as officers and committee chairmen.

Members of Humble's Medical Division are encouraged to submit technical articles to their professional journals. Management feels that an industrial physician active in his professional affiliation makes a better member of the Humble medical staff.

Medical Staff

THE important work of Humble's Medical Division goes forward through the efforts of a highly qualified and experienced staff. The foundation of this staff consists of four full-time physicians at Houston, five at Baytown, and one traveling with the Mobile Medical Unit. In addition there is a industrial hygiene engineer and a medical office administrator.

Mobile Medical Unit

Dr. V. C. Baird has been Chief Physician and Medical Director for the past 13 years. A pioneer in preventive industrial medicine, he came to Humble's Medical Division in 1935 from Standard Oil Company of Louisiana, where he was Assistant Medical Director. Recently, Dr. Baird was certified as a Diplomate of the American Board of Preventive Medicine, in Occupational Medicine; he is also a Fellow of the American College of Preventive Medicine, and a member of the Council on Industrial Health of the American Medical Association.

Dr. Baird is supported by two able Assistant Chief Physicians. They are Dr. R. W. Pipkin, in charge of medical facilities at Baytown refinery, and Dr. R. A. Wise, in the Houston office. Other Houston physicians include Dr. H. T. Englehardt and Dr. H. B. Snyder. Four Baytown physicians are Dr. H. O. Sappington, Dr. T. S. Howell, Dr. W. P. Cappleman, and Dr. J. W. Terrell.

Mr. J. W. Hammond is Humble's industrial hygiene engineer, and Mr. H. J. Stroud is the medical office administrator.

Together, these men have served more than 100 accumulative years in the field of industrial medicine and public health. They are graduates of recognized medical schools and most have done postgraduate work. They are Diplomates and Fellows in the various Boards of medicine and many hold professorships at colleges of medicine and universities in Texas.

In addition to being active in their professional affiliations on the local, state and national levels, they are leading church and civic-minded citizens in their communities. One, Mr. Hammond, is Mayor of West University Place, an incorporated city inside Houston city limits.

In all their contacts with Humble employees, these men and their assistants strive for the warm, friendly touch. Like the oldtime country doctor, they know the first names of literally thousands of their patients and are equally familiar with their health records.

Conclusion

AS A PIONEER and veteran in the field of industrial preventive medicine, the Humble Medical Division has functioned long enough to have faced and coped with a great many problems. But in an industry as complex and progressive as the oil business, new problems constantly arise from the use of new materials, new methods, new equipment. To anticipate these problems wherever possible and deal with them quickly and efficiently, the Division is engaged in constant study and research. Its staff members are not content to stay merely abreast of the times; they make every effort to stay *ahead* of the times—to build and maintain the highest possible level of employee health.

Accepting the Award

ROY H. HORTON, Director

IT IS A sincere privilege and a high honor for me on behalf of the management of Humble Oil & Refining Company to accept this Award. Our management in receiving this high honor is not unmindful of the fact that full credit for any achievement in the field of industrial medicine by our company must go to Dr. Vailiant C. Baird and his fine staff. An effective Medical Department must first of all be staffed with people who are professionally competent. They must then merit the confidence and respect of the medical profession, of the management with whom they work, and of the employees whom they serve. It is our feeling that Dr. Baird and his staff more than measure up in all of these areas.

In addition to the outstanding work they are doing in the field of professional medicine, Dr. Baird and his staff are making a significant contribution to the employee relations effort of our company. In the course of their consultation with and examination of employees, Company doctors have an opportunity to obtain a keen insight into employee attitudes concerning their work. Such information is helpful in Employee Relations staff meetings which Dr. Baird or one of his assistants attends regularly.

Dr. Baird is an active member of the Annuities and Benefits Committee, which interprets and administers the Company's benefits program. In addition, Company doctors serve on many management committees dealing with health and sanitation problems. Through this close relationship they bring to the Employee Relations staff and the management committees of the Company information concerning employee morale and acceptance of Company policy. In like manner, by participating in these meetings they are exposed to management plans and objectives as well as management attitude and philosophy, and thus are better equipped to counsel with employees not only on medical problems but also in the broader field of human relations.

It has often been said by members of the Humble Oil & Refining Company management that the Company's greatest asset is the 19,000 men and women that comprise its personnel. If this is the Company's greatest asset, and I firmly believe that it is, then it follows that management should give full spport to the medical staff whose efforts are dedicated to the physical well-being of this asset.

Speaking for the management of the Humble Company, we wish to express to Dr. Mallery and his Committee our sincere appreciation for this significant Award, and to assure them that we shall strive to maintain policies and procedures that will merit their continued commendation.

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The St. Louis Conference

APRIL 22-26, 1957

Salute to the 1957 Fellows of the Industrial Medical Association

W. P. SHEPARD, M.D., M.A.
Second Vice President, Metropolitan Life Insurance Company
Chairman, Council on Industrial Health, American Medical Association

THIS IS a memorable occasion. It is also a momentous one. Never before have these halls and this organization witnessed a ceremony to do honor to so large a group of industrial physicians. Never before has there been a more auspicious moment than this one today in the long history of the sometimes faltering progress of occupational medicine. Our profession has come a long way since the publication of our first textbook "De Morbis Artificum Diatriba" by Bernardino Ramazzini in 1700.

An occasion must be memorable when the members of any professional organization gather to honor their colleagues for achievement. Too often in our modern life outstanding achievement is overlooked. Yet you have been selected from among your peers as having "achieved distinction in the field of Industrial Medicine." Each of you has been nominated by the District Counselor of the I.M.A., together with the officers of your Component Society, as being eligible for the scrutiny of the Board of Examiners. They in turn have found you qualified for Fellowship in our Association — qualified to join equally with our present 736 Fellows. Thus, today you enter the upper quartile of our total membership of 3,384. You are most welcome. We salute you. It is indeed a memorable occasion!

For many of you, this will be all the distinction desired in occupational medicine. You will always occupy an important place in safeguarding and restoring the health of our country's workers. Indeed, the needs are so great that the vast majority of workers will perhaps always depend

Association Presidents
Left to right: Lester V. Cralley, Ph.D. (AIHA); E. S. Jones, M.D. (IMA); Sara Wagner, R.N. (AAIN); Walter B. Elvers, D.D.S. (AAID); William G. Fredrick, D.Sc. (ACGIH).

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Dr. Shepard salutes the 1957 Fellows.

primarily on the physician who devotes part of his time to industry. In fact, whether the worker in the small plant gets any of the benefits of modern industrial medicine will depend on the willingness of many more physicians to follow the example most of you have set, devoting part of their practice to occupational medicine. In numbers you will be the largest medical influence in industry. May that influence be always strong and wise!

For others, further specialization may appeal, as it has already to some. Soon there will be several accredited postgraduate schools in this country. Certification in industrial medicine through the American Board of Preventive Medicine is already available. Thus, through the pioneer and cooperative work of the Industrial Medical Association, the American Medical Association, and the Board of Preventive Medicine occupational medicine becomes a recognized specialty for the first time in the United States. This fact alone would make this occasion a momentous one.

FELLOWSHIP in the Industrial Medical Association is indeed an achievement and a milestone in your professional careers. But it does not mark the end. Fellowship implies continuing responsibility on your part to improve your professional knowledge and skills to the end that the health needs of the working men and women may be better served. With your present knowledge and experience you are competent to render with skill and satisfaction the vast majority of services needed by employers and employees. However, the field of medicine has grown so rapidly and has become so complex that it is impossible for a single human mind to encompass it all. This implies, therefore, as in all other forms of medical practice, that where you recognize problems beyond your competence, you will call specialists in consultation. There is no better educational experience in the practice of medicine than the specialist consultation, when the expert adds to his own knowledge by new observations, and the physician on the job learns the intricacies of some new problem. The result is increased com-

Dr. Shilling congratulates Dr. Sutter on his successful year as Deputy General Chairman.

Left to right: E. C. Holmblad, M.D., D. John Lauer, M.D., Jerome W. Shilling, M.D.

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Dr. Sterner receives the William S. Knudsen Award from Dr. Burnell.

Mr. Horton receives the Health Achievement in Industry Award from Dr. Mallery.

petence for both. Often industry offers ready opportunities for this valuable learning experience.

THIS occasion is momentous then because of the "coming of age" of occupational medicine in this country, signified in part by this large 1957 Class of Fellows.

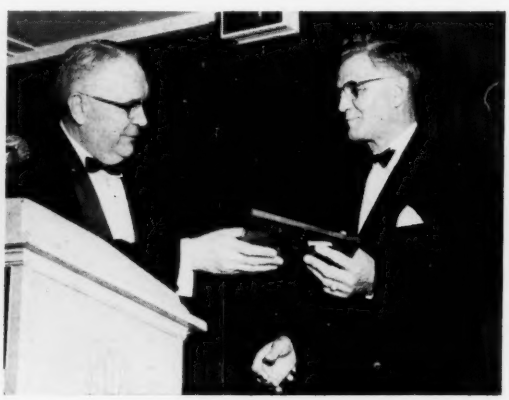
There is, though, a deeper reason which makes this day auspicious in the annals of our profession. It may be less tangible, but it is nonetheless powerful even though it cannot be precisely weighed and measured. To some who are gifted with the ability to stand aside and see afar, it appears that we have come to a unique moment in the history of medicine in the United States. We are witnessing the convergence of three great streams of socioeconomic progress: high employment and high wages; greater health consciousness by labor and management; greater participation by physicians in occupational medicine. The latter is the smaller stream but it may well become the crest-wave at the forefront of all three. Indeed, it must needs do so.

As labor becomes more scarce, the worker's mental and physical health becomes even more important. Increased daily output per worker is essential to determination of prices; prices decide competition; successful competition determines profits. Partly because impaired mental or physical health reduces output, but also because management and unions alike are learning that good health is a good investment both in morale and in dollars, we now see vast sums expended by both for health purposes. How wisely these sums are spent, and whether they produce the desired results, depend almost solely on medical judgment and advice. Thus, medicine becomes an essential ingredient in all industrial health programs. Physicians must be at the crest-wave of these converging currents.

There will be no progress of this combined stream, but only whirlpools and eddies and eventual stagnation, without medical participation. With medical participation of high competence there will emerge a new era of health protection and restoration such as we have not seen before—one that cannot be turned back.

The speed of this progress depends on medical competence in its leadership of the industrial health team: managers, union leaders, nurses,

Dr. Vorwald presents the Citation for Merit in Authorship to Dr. Wade.



Dr. Shilling presents the Past-President's Award to Dr. Jones.

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industrial hygienists, safety engineers, toxicologists, and specialists.

You have been selected by your colleagues as having attained great competence. You will hereafter be recognized as leaders in the newly converging currents of management, labor, and industrial medicine. May that leadership ever be proud and strong and increasingly competent, to the end that all who work may be well, and the well be thus more happy!

The IMA Fellows, 1957

ROGER EVERETT ALLEN, M.D., Southbridge, Massachusetts.

WILLIE OLEAN ARMSTRONG, M.D., Houston, Texas.

ASA BARNES, M.D., Louisville, Kentucky.

THOMAS HENRY BATES, M.D., Newcastle-on-Tyne, England.

EARL DOUGLASS BAUMANN, M.D., Pittsburgh.

EUGENE BENJAMIN BENNETT, M.D., Glendale, California.

HERMAN JOSEPH BENNETT, M.D., Poughkeepsie, New York.

JOE MARVIN BOSWORTH, M.D., Atlanta, Georgia.

PHILIP RALSTON BOYD, M.D., London, England.

MORRIS ALLEN BRAND, M.D., New York City.

ROBERT WILLIAM BUTLER, M.D., Waterbury, Connecticut.

DONALD CASS, M.D., Los Angeles.

HUGH EDWARD CHAVERN, M.D., Pittsburgh.

LOUIS LUCIANO COVINO, M.D., Newark, New Jersey.

JOHN PATRICK CREED, M.D., Haverhill, Massachusetts.

FRANCIS HENRY DEGRACE, M.D., Passaic, New Jersey.

ROBERT HENRY FALES DINEGAR, M.D., New York City.

RICHARD EUGENE DOUGHTY, M.D., Louisville, Kentucky.

IMA President, E. S. Jones, M.D., presiding at the Annual Banquet.

DANIEL JOSEPH DUGGAN, M.D., Boston.

WILLIAM GREGG DUPONG, M.D., Brooklyn, New York.

AMY CHRISTINE EINERT, M.D., Berkeley, California.

LEOPOLD HENRY FRASER, M.D., Richmond, California.

GEORGE CAMP FREEMAN, M.D., Newark, New Jersey.

GERALD JONAS FRIEDMAN, M.D., New York City.

JOSEPH EDWIN GRIFFITH, M.D., Atlanta, Georgia.

EDWARD MANSFIELD GUNN, M.D., Chevy Chase, Maryland.

WILBERT JAMES HELZLSOUER, M.D., Dravosburg, Pennsylvania.

EDWARD VALE HENSON, M.D., South Charleston, West Virginia.

NATHAN BERNARD HERMAN, M.D., Baltimore.

B. DIXON HOLLAND, M.D., Chicago.

MAX NATHANIEL HOWARD, M.D., New York City.

HERBERT JOHN KIRCHNER, M.D., Los Angeles.

EDWARD WARREN KISSELL, M.D., Akron, Ohio.

EUGENE HEEB KREMER, JR., M.D., Louisville, Kentucky.

JOSEPH CLARENCE LANE, M.D., Manhassett, L.I., New York.

FRANCIS ELMER LEBARON, M.D., Foxboro, Massachusetts.

ROBERT ALEXANDER LOVE, M.D., Upton, L.I., New York.

A. DUNCAN MACDOUGALL, M.D., Groton, Connecticut.

J. ALLEN MARTIN, M.D., Pittsburgh.

RAYMOND EAKIN MASTERS, M.D., East McKeesport, Pennsylvania.

HOWARD ELLSWORTH MATHAY, M.D., Youngstown, Ohio.

CHARLES HAROLD MCCALLISTER, M.D., Los Angeles.

Conference Officials (left to right): Roland S. Kieffer, M.D., Jerome W. Shilling, M.D., Richard A. Sutter, M.D., William L. Macon, M.D.

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CLARK RICHARDSON MILLER, M.D., San Francisco, California.

JAMES EDWARD MORIARITY, M.D., Cohasset, Massachusetts.

WILLIAM GREGORY MORGAN, M.D., Owensboro, Kentucky.

RAYMOND JOSEPH MURRAY, M.D., Bellaire, New York.

WILLIAM PATRICK MURPHY, M.D., Syracuse, New York.

VINCENT MARTIN MYERS, M.D., Huntington, New York.

WILLIAM FREDERICK NARDONE, M.D., Niagara Falls, New York.

PETER HOWARD NASH, M.D., Toronto, Canada.

ROBERT BRENDAN O'CONNOR, M.D., Pittsburgh.

THOMAS JOSEPH O'MEARA, M.D., Pittsburgh.

FRANCIS HENRY O'NEIL, M.D., Eureka, California.

ANDREW WILLIAM ORLOWSKI, M.D., Torrington, Connecticut.

DONALD OLIN OSBORN, M.D., Austin, Minnesota.

JAMES WALTON OSBORN, M.D., Cleveland.

JAMES LESTER PATTERSON, M.D., Logan, West Virginia.

WARREN PAYNE, M.D., Willoughby, Ohio.

ROBERT WORTH PIPKIN, M.D., Baytown, Texas.

HERMAN D. POCOCK, JR., M.D., Cleveland Heights, Ohio.

GANDOLPH A. PRISINZANO, M.D., Sacramento, California.

ROBERT LOGAN QUIMBY, M.D., Wellesley, Massachusetts.

DOUGLAS ALEXANDER RIES, M.D., St. Louis.

NORBERT J. ROBERTS, M.D., New York City.

WILLIAM ELLES RUSSELL, M.D., Kennewick, Washington.

JOHN GOODWIN SAMUELS, M.D., Hickman, Kentucky.

RICHARD JARRETT SEXTON, M.D., Charleston, West Virginia.

LLOYD BERTRAM SHONE, M.D., Washington, D.C.

EDWARD ARTHUR SHORTEN, M.D., Youngstown, Ohio.

JOHN HENRY STUNZ, JR., M.D., Lockport, New York.

ERNEST ALDEN TERRY, JR., M.D., Louisville, Kentucky.

JOHN JOSEPH THORPE, M.D., New York City.

HARRY EDUARDE UNGERLEIDER, M.D., New York City.

JAMES PAUL WARREN, M.D., San Francisco.

STAFFORD LEAK WARREN, M.D., Los Angeles.

LEON J. WARSHAW, M.D., New York City.

NORMAN WEBB WHITE, M.D., North Grafton, Massachusetts.

EDWARD SENN WILSON, M.D., Pineville, Kentucky.

ROBERT ALLEN WISE, M.D., Houston, Texas.

Prize-Winning Exhibit

THE Blue Ribbon First Award for informative scientific exhibits was taken by three University of Cincinnati dermatologists at the 1957 Industrial Health Conference.

The prize-winning exhibit graphically demonstrated the research by Drs. R. R. Suskind, S. R. Sheen, and M. Meister, who investigated the effect of synthetic detergents upon human skin. The hands of 60 hospitalized subjects with symmetrical bilateral dermatoses were tested under controlled conditions. Visual comparisons of the hands of typical subjects, one hand having been immersed repeatedly in detergent solutions and the other in water alone, were presented by life-sized, back-lighted colored transparencies. These test exposures to detergents were shown to be relatively severe, compared to normal household exposures which were established by a survey of the habits of 200 women under home conditions.

The results obtained by the Cincinnati physicians showed that the isolated and severe experimental exposure of a variety of hand dermatoses to household washing products did not affect the dermatoses adversely. It was further concluded that household soaps and synthetic detergents do not appear to sensitize the skin allergically.

So-called "housewives' dermatitis" seems to result from an interplay of diverse factors involving all of the materials the patient touches, in addition to ambient temperature and humidity, mechanical trauma, other pre-existing or concomitant dermatoses, bacterial and fungal infections and emotional problems. The role played by washing products appears to be a minor one.

The Awards

THE COMMITTEES responsible for selecting the recipients of the four Awards presented annually by the Industrial Medical Association have no easy assignment. The number of candidates whose qualifications demand consideration grows greater with each choice; the factors involved in identifying the "best" of many "greats" increase from year to year. This means more work for the Committees; but it adds distinction to the Awards.

The pictures on page 306 show Dr. Max Burnell presenting the William S. Knudsen Award, "Industrial Medicine's highest honor," to Dr. James H. Sterner; Mr. Roy H. Horton, Director, Humble Oil and Refining Company receiving from Dr. O. T. Mallery, Jr., the Award for Health Achievement in Industry; and Dr. Arthur J. Vorwald handing to Dr. Leo Wade the Citation for Merit in Authorship. For each of these there were many candidates. But for the Award to the retiring President, there was, of course, only one — this year, Jack Jones.

The qualifications for which these recipients were selected appeared last month (*Indust. Med. & Surg.*, 26:5, 265 (May) 1957). Mr. Roy H. Horton's comments on the Health Achievement in Industry Award appear on page 303 herein, following a description of Humble Oil's Medical Division.

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Industrial Medical Association

President's Page

THE 1957 Industrial Health Conference is now a matter for the historians. To those in St. Louis who worked so hard, and long, and well, the most in thanks.

The aggregate registration of the five participating groups was over 2600. Indeed it was a full week with general sessions, joint meetings, section meetings, conferences, hospital clinics, and plant tours.

This, the Forty-Second Annual Meeting of the Industrial Medical Association, proved second to none. The excellence of the program was attested by the large and, in instances, up-to-capacity audiences who attentively witnessed one of the most magnificent programs ever to be developed within our Association. In scope, the subject matter was broad, with genuine and sustained appeal.

Approximately 250 attended each of the Hospital Clinics. The St. Louis University School of Medicine, at the Firmin Desloge Hospital, presented a clinic on "Occupational Diseases and Trauma of the Chest." The Washington University School of Medicine at the David P. Wohl, Jr., Memorial Hospital presented another on Burns — "Radiation Burns"; "Thermal Burns"; "Restoration of Function after Thermal Burns."

At the IMA opening session on Tuesday afternoon, Mr. Frank Curtis, Vice President, Monsanto Chemical Company, presented the Sappington Memorial Lecture, "The Problem of Producing Executives." This was followed by a joint meeting (IMA-AAIN-AAID) on "Geriatrics and Retirement."

Wednesday morning, April 24, 1957, was entirely devoted to a Medical-Legal Symposium on "The Physician as an Expert Witness in the Court Room." The greater part of Wednesday afternoon was directed to the Annual Business Meeting, Fellowship Ceremony, and election of Officers and Directors — all preceded by a paper on "Occupational Diseases and Injuries of the Eye." Thursday, April 25, 1957, was given over to the Medical and Surgical Sections.

In 1956, in Philadelphia, certain refinements were incorporated into the Fellowship Induction Ceremony. This year in St. Louis were added procedures which further enhanced the dignity of the occasion. The President, the Board of Examiners for Fellowships, and the Officers and Directors were on the stage. Dr. Shepard delivered the Fellowship Address. From such a message, I am sure the Fellowship Candidates will truly profit. This Address appears on page 304 herein. All who were there will agree that this was indeed an impressive ceremony, with dignity befitting the occasion.

The District Counselors' Meeting was a heartwarming affair. With such concern, motivation, and will to accomplish, no conclusion can be reached other than IMA will continue its forward march. Specific District problems, problems common to all, and accomplishments during the past year were matters of free discussion. Unleashed interchange of experiences, ideas, and advice, prevailed during this three-hour assembly.

The meeting of the Committee Chairmen was likewise a reflection of interest, past accomplishments, and will to accomplish. The innovation at this meeting was the report, including recommendations, of the new Committee on Committees. This Committee has established criteria designed to guide the Committees and set forth specific recommendations as to Committee structure.

The meeting of Component Society Officers brought to light regional problems, accomplishments, and plans for the future. For the first time it was learned of the establishment of a Women's Auxiliary in the Michigan Industrial Medical Association. The prospect of similar auxiliaries becoming a reality in other Component Societies appears bright.

The Orientation Meeting on Thursday, April 25, 1957, of all newly-elected and appointed Officers, Directors, Committee Chairmen, and District Counselors was stimulating. The Planning Meeting for the 1958 Industrial Health Conference brought to a close the IMA activities.

Finally, I must again pay tribute to those in St. Louis who were responsible for such an outstanding Conference. IMA members who have never been involved in planning a Conference may not realize the "blood, sweat, and tears" inevitable in such efforts. Without the expenditure of endless time, plain hard work, and continuous attention to detail, such a meeting would not have been possible. For the guidance of future planning, the 1957 Industrial Health Conference might well mark the year of near-perfect accomplishment.

Jerome W. Shilling M.D.

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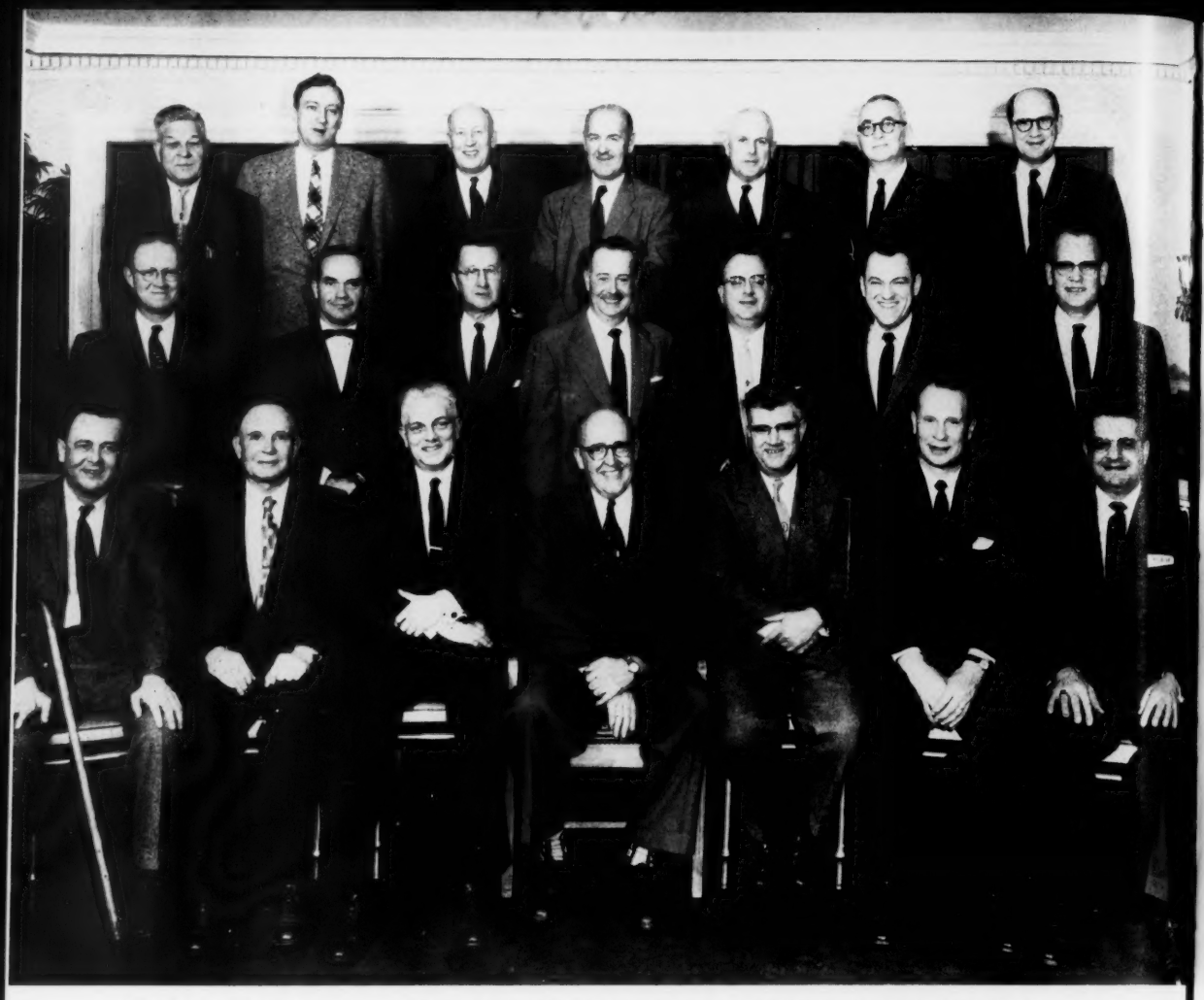

Bottom row, left to right: Robert Watrous, M.D., Abbott Laboratories; Bryce B. Reeve, M.D., Standard Oil Company of Indiana; Edward H. Carleton, M.D., Inland Steel Company; Richard Bennett, M.D., U. S. Steel Corporation; James Dewane, M.D., Libby, McNeill & Libby; Andrew J. Oberlander, M.D., Prudential Insurance Company of America; K. F. Kapov, M.D., Armour and Company.

Middle row, left to right: John Post, M.D., Zenith Radio Corporation; Theodore Van Dellen, M.D., The Chicago Tribune; Joseph H. Chivers, M.D., Rehabilitation Institute of Chicago; Arthur K. Peterson, M.D., R. R. Donnelley & Sons Company; J. L. Salomon, M.D., Ford Aircraft Division; Edward J. Schowalter, M.D., Western Electric Company; Allan P. Skoog, M.D., G. D. Searle and Company.

Top row, left to right: Paul Rush, M.D., Corn Products Refining Company; Paul J. Whitaker, M.D., Allis-Chalmers; Robert M. Graham, M.D., The Pullman Company; George H. Irwin, M.D., Chicago Transit Authority; N. Gillmor Long, M.D., Lumbermens Mutual Insurance Company; John C. Troxel, M.D., Swift & Company; Eugene L. Walsh, M.D., International Harvester.

The Medical Directors Club of Chicago

THE MEDICAL Directors Club of Chicago was organized early in the fall of 1955 by a few interested industrial physicians, foremost among whom was Dr. Carl T. Olson who had the original idea. It was proposed that the Club be an informal organization, meeting once a month in a luncheon session, primarily to discuss administrative problems of Industrial Medical Departments.

The first President was Dr. Herbert R. Atherton (now deceased) who had little difficulty interesting physicians in industry in the Chicago area in becoming members. The Club is a flourishing one and meets the first Thursday of each month, except the summer months, at the Drake Hotel. The last session of the season, in May, is usually an evening meeting at which the members and their wives gather for dinner.

Membership in the Medical Directors Club of Chicago is limited to full-time physicians who are Medical Directors of their companies in the Chicago area — either locally or nationally. The accompanying photograph reveals the present membership — with the exception of Dr. Olson and Dr. John R. Winston, Santa Fe Railroad.

The objectives of the Club are: (1) to inter-

change information and experiences of each and all the members; (2) to promote better understanding between management and medicine; (3) to stimulate interest in the teaching of industrial medicine.

The meetings are usually not devoted to technical medical subjects but rather to administrative problems common to all members. A Constitution and By-Laws have been prepared so that the affairs of the Club can be properly conducted.

The present officers of the Medical Directors Club of Chicago are: President, Dr. Richard Bennett; Vice President, Dr. A. J. Oberlander; Secretary-Treasurer, Dr. James Dewane.

Letters

Fourth of July in Helsinki

TO THE EDITOR: I have just received a copy of your letter of May 7 to Secretary Dulles. I note that the United States will have some 85 persons in attendance at the XII International Congress in Helsinki July 1-6, 1957, and that you inquire about the observance of July Fourth.

First of all may I tell you that the Embassy will be very glad to be of any possible assistance to the members of the United States Delegation during their attendance at this Congress. I am sure that all of your members will enjoy your trip to this interesting country.

It has come to be the custom in Helsinki for the American Embassy to organize an old-fashioned American picnic on July Fourth. The picnic is held on the Embassy grounds, and all Americans, resident or visitors who happen to be in Helsinki on that day, are welcome. My wife and I hope very much that you and the other members of the American Delegation will find it possible to attend our picnic this year. Details in regard to it will be awaiting you when you arrive in Helsinki.

American Embassy,
Helsinki, Finland.

—JOHN D. HICKERSON,
American Ambassador.

Personal Health Chart

TO THE EDITOR: With reference to the excellent article by C. Leggo, M.D., in your December issue, about workmen's compensation, I would like to pass on to you — or to him — a suggestion which would alleviate many of the present shortcomings as described in his paper. If I understand correctly, Sweden enforces by law a personal health-chart or booklet in which all diseases and/or treatments are to be registered. I see no reason why the agency which pays for the compensation under workmen's compensation should not have the right to enforce such a health booklet for all industrial injuries and disabilities. If this could be made simple and yet comprehensive, future employers, physicians, and whoever concerned could gain a picture at a glance of the person's past health record as far as industrial health is concerned, and much unwarranted overlapping of claims, and unjustified "aggravation" of pre-existing conditions could be avoided.

—HENRY BACHMAN, M.D.
Malta, Ohio.

Books

Summarizing Experiences

THERAPY OF RADIOELEMENT POISONING: MARCIA WHITE ROSENTHAL, Editor, Argonne National Laboratory, Technical Services, Department of Commerce, Washington 25, D.C., 1956, pp. 175, $1.00.

A Conference on "Experimental and Clinical Approaches to the Treatment of Poisoning by Radioactive Substances" was sponsored by the Division of Biological and Medical Research at Argonne National Laboratory, Lemont, Illinois, on October 20 and 21, 1955. The increasing production of transuranic elements and fission products prompted the authors to organize this meeting for the purposes of summarizing experiences with removal of internally deposited radioelements, evaluating currently used therapeutic techniques, and considering new approaches to treatment. The Conference brought together many of the scientists actively engaged in the field; approximately 65 participants from the United States, Great Britain, and Canada attended.

A New Quality

PRACTICAL PSYCHIATRY FOR INDUSTRIAL PHYSICIANS: W. DONALD ROSS. Charles C. Thomas, Publisher, Springfield, Illinois, 1956, p. 401, $7.50.

It is one thing to acquire speaking familiarity with a foreign language; it's another thing entirely, to be able to think with facility in that new language. Many skilled psychiatrists who have ventured into occupational health have continued to do all their thinking psychiatrically. A fragile artificiality deters acceptance by the industrial physician. Refreshingly, this book is different. With ease the author moves between the two topics until they meld into a unity. Psychiatry as it relates to industrial workers becomes a natural part of industrial medicine. No other book has attained just that quality.

While this book reaches into every portion of the industrial physician's activities, a single situation will reveal this omnipresent flavor of being-in-touch-with-things. The little selected item is that of "dust," "pneumoconiosis," "silicosis." To many a physician versed in the dusty lung diseases, it never occurred that all the pathology is not in the lungs. This psychiatrist sees the silicotic miner and other miners, not only as a chesty bag full of nodules destined to remain to the last day of life, but as the victim of all manner of unusual psychic affronts, from dust to darkness, from the subterranean work environment to the affront of blast explosions. Without any wonderment it was recorded for a certain group of coal miners, that 57% presented mixed psychoneurotic responses. Knowing all this, the author would accept as valid the contention that among the silicotics of Ronchamp (Haute Sâone) in France,

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the death rate from suicide exceeds that from all other occupations. In like manner, this author seems to have stood in the shoes of all workers. He may have stood in the shoes but he reached into their minds and came to understand much. This psychiatrist is no outsider to industrial medicine. Let him in.

In Daily Use

THE MERCK MANUAL OF DIAGNOSIS AND THERAPY: Ninth Edition. Merck & Co., Inc., Publications Department, Rahway, New Jersey, 1956, pp. 1870, regular and deluxe editions $6.75 and $9.00 respectively.

The publisher reports that this ninth edition's predecessor, the eighth edition, led to the sale of 360,000 copies, English and Spanish editions, since its appearance in 1950. Any aspiring medical author, and for that matter any publisher of medical journals, might do well to sit at the feet of the Merck editorial board seeking to learn through what means such an output became possible. Any medical text that has a sale of 3,000 copies ordinarily is regarded as highly successful. Already that editorial board provides a substantial explanation when it observes that this book represents the combined efforts of more than 100 outstanding clinicians in the United States and elsewhere.

Part I consists of 20 sections and 365 chapters devoted to the etiology, pathology, symptomatology, clinical course, complications, laboratory findings, diagnosis, prognosis, and treatment of practically all diseases.

Part II, less specific in coverage, is devoted to routine immunization procedures, clincal and bedside procedures, pre- and postoperative routines, diets, and office laboratory methods.

Long ago, the usual medical practitioner gave up the fight to keep abreast of medical developments through reading original contributions in some scores of publications. Without much choice, he delegated that task to others such as the Merck editorial board and all in good time came to trust the pronouncements as found in this Manual. It is still referred to as a pocket-size book but if it gets any larger there will have to be changes in the sartorial equipment of the physician else he will have to dig out his great grandfather's saddle bags.

This book is not to be confused with "The Merck Index" now in its sixth edition, which is an encyclopedia of chemicals and drugs, addressed to chemists, pharmacists, physicians, and industrial hygienists. It is difficult to decide which of these two books is the more useful. Both are in daily use in thousands of places.

Pollution Report

ENGINEERING STUDIES RELATED TO AIR POLLUTION PROBLEM: Dept. of Engineering, University of California, Los Angeles, Report 56-26, 1956, pp. 38.

Late in 1954, the State of California provided funds to the Department of Engineering, University of California, Los Angeles, to initiate an accelerated study of current air pollution problems. This worthy report presents a summary of work performed under this program.

Science Miniature

Respiratory Obsession in Silicotics

DR. MARCEL MAULINI
Ronchamp, Haute-Saone
France

IN STUDIES of silicosis in coal miners of Ronchamp, a constellation of manifestations has appeared centering about painful respiration, and anxiety with both physical and psychological features. Striking in this situation is an unusual frequency of tendencies to suicide.

The outstanding indications of this condition, here designated "silicotic respiratory obsession," are: diffuse thoracic pain; respiratory anxiety; and suicidal tendency.

In addition to these constant features, there may appear such other lesser ones as abnormalities of thirst and hunger, anorexia, precordial pain, and rarely, vascular collapse.

This condition appears to arise only in advanced and prolonged stages of silicosis although at times appearing in less chronic states with acute functional disturbances. It is possible to deny that this constitutes a compensation neurosis since, in the usual situation, compensation already has been paid or provided for on a continuing basis.

Diffuse thoracic pain is relatively common among miners in this area affected by silicosis, but in this syndrome it becomes more severe and more nearly constant. Appropriate chest examination reveals no definitive cause for this pain. It usually constitutes the prodrome for the anxiety state.

The respiratory anxiety is likely to appear suddenly and is reflected by unusual apprehension and fear. A feeling of impending disaster seizes the patient. The respiratory rate is accelerated and dyspnea increases. In the process the patient is likely to complain of muscular pain and cramps over the entire body resulting in deep lassitude.

It is not known that suicidal tendencies of high frequency exist among silicotics the world over, but in the situation here, such a state is so prevalent as to attract attention. It is possible that this condition is local only to this area and that propinquity and precedent may play a role.

Conviction arises that the silicotic, perhaps to a degree greater than for chronic diseases in general, is in need of psychiatric and psychologic therapy and that, as a generality, such therapy frequently is neglected.

Summary

THE AUTHOR has encountered and described a clinical entity, "Respiratory Obsession in Advanced Silicotics," characterized by: diffuse chest pain; respiratory anxiety, and suicidal tendencies. An array of minor features irregularly accompanies the major constellation.

INDUSTRIAL MEDICINE AND SURGERY

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ESTABLISHED 1932

Publisher A. D. CLOUD

Volume 26 JUNE, 1957 *Number 6*

Poison Control Centers

WITH astonishing rapidity, poison control centers for the emergency care of acute poisoning are springing up over the country. It is known that centers have been established in Phoenix, Arizona; Denver, Colorado; Washington, D.C.; Chicago and Springfield, Illinois; Indianapolis, Indiana; Louisville, Kentucky; Baltimore, Maryland; Boston and New Bedford, Massachusetts; Grand Rapids, Michigan; Kansas City, Missouri; Atlantic City, Montclair and Newark, New Jersey; New York City; Durham, North Carolina; Oklahoma City, Oklahoma; Harrisburg, Pennsylvania; Memphis, Tennessee; Dallas, Texas; Seattle, Washington; and Milwaukee, Wisconsin. By this time additional centers will have been established so that already this listing is incomplete.

For clearinghouse purposes a national poison control center has been set up by the Public Health Service in Washington following some spurring by the American Academy of Pediatrics and the American Public Health Association. This national center's service will include interchanging information among local control centers; stimulating prevention and treatment of poison cases; encouraging research; aiding in the establishment of poison control centers; studying trends in poisoning accidents; and acting as a repository of information. Staff for the clearinghouse will include a pediatrician, a doctor of pharmacy or a pharmacologist, and an educational specialist.

Since about 65% of all poisoning cases involve children, it is with propriety that so far all or a majority of the centers have been located within the pediatric departments or within pediatric jurisdiction. With justification the question might arise as to why the celerity in this development. It may be contended that this seeks to overcome tardiness and neglect in a long existing need. Otherwise it may be recognized that this period is producing new drugs, new pesticides, new disinfectants with astonishing fecundity. More than ever the public is surrounded by potentially harmful agents. Recent reports from centers in 13 cities reveal that of 3877 cases, 2532 were in children under five years of age, according to Dr. Edward Press, Chairman of the Subcommittee on Poisoning of the American Academy of Pediatrics' Accident Prevention Committee. Of these, 955 children ingested internal medications—aspirin, laxatives and sedatives—in which death resulted for three; 188 ingested external medication nonfatally; and 1389 ingested cleaning agents and other chemicals. In the last group 17 were fatally affected by the materials ingested including lye, kerosene, other petroleum distillates, pesticides, paints containing lead, and some unknown substances.

It is not known that at this time any justification exists for specialized industrial poison control centers. Every complete medical program in industry contemplates possible poisoning emergencies, and facilities have been created for coping with all anticipatable poison situations. Notwithstanding, the unanticipated may arise from work exposures, but more importantly from causes unrelated to work such as might occur anywhere in the adult population.

All this being true, all industrial physicians should know the location of the nearest poison control center and should be aware of the overall clearinghouse within the Division of Special Services of the Public Health Service in Wash-

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ington. No industrial physician may be so well qualified that without exception he will be able to deal with every possible direful emergency. A telephone call to the nearest poison control center, or even to Washington, might save a life.

Otherwise, the poison control center personnel should be aware that a distinct but limited opportunity for their services relates to the industrial worker. That workers' potential exposures exceed 10,000 and actualities of acute exposure are not a rarity. The occupational health world continually emphasizes that its services to workers best are carried out through the team approach. Here is a new member of the team—the poison control center director. Friendly rapport may prove profitable.

Valents

THE ENGLISH language, flexible as it is, not always has the needed word. There is no word descriptive of the sound person who consults a physician or visits a hospital for some preventive measure. There is no opposite to "patient." Heeding the pressure of propaganda, the stalwart who seeks "polio" vaccination promptly is registered as a patient; a case record is prepared, and this record is sandwiched among the duodenal ulcers and the varicose ulcers. Biding his turn, he sits in a patients' waiting room, and for his second injection he is provided a patient's appointment card. Later on, when perchance he is an applicant for life insurance, likely the form to be filled in will include "When did you last consult a physician?" Unless the answer be explicit the assumption may be "Here is a sick man." The pediatricians get around this by operating "Well Baby Clinics." Otherwise, all too many hale souls become "patients" solely because of deficient terminology.

To broaden the English language in this particular need, Dr. John P. Hubbard, writing in "The Early Detection and Prevention of Disease," proposes introduction and use of the term "valent" to mark that physically staunch individual who consults the medical profession for reasons of health. That word's roots go back to the Latin, whence came much of our language, to the verb "valere," meaning to be strong. It is appropriate that the healthy client of a physician should be designated by a word beginning with "V." More than for any other letter, the vigorous words of our language begin with "V" — virtue, valor, valiant, vim, vitality, venom, and on to vice and value. To be able to qualify as a "valent" should become a pride. The person with sound teeth to be cleaned by his dentist is neither a patient nor an invalid. He is a "valent." Scores of other medical occasions mark a status of being a "valent" and not a patient.

If This Is But a Dream

EVERY employee is his or her own boss at Upjohn Company's ultra-modern $40 million drug factory in Kalamazoo, Michigan, whose management follows the liberal personnel philosophy of company's founder, the late Dr. W. E. Upjohn. Although factory produces millions of tranquilizing pills each year, few of its 3,000 employees need them. Here's why: no time clocks are used in factory. All workers (50% are women) are on their honor to come to work on time. No one is docked for absences . . . and no questions are asked. (Company claims one of nation's lowest absentee and turnover records.) When a worker gets tired of doing one job, he can "trade" assignments with another employee for change of pace. If he decides to get his hair cut, he merely phones plant barbershop for appointment, leaves his machine and gets clipped. During his morning and afternoon coffee breaks, he can avail himself of shuffleboard courts, golf driving tees, putting greens, ping-pong tables, card tables, coffee shops, a swank restaurant and luxurious lounge. To get where he's going in 33-acre factory without tiring himself, he can use one of company-provided electric scooters. Employee can travel to and from work in one of company's buses. All promotions come from within company. (Only exceptions are physicians or researchers). Workers are given fully-paid pension program, paid vacations plus a hospital plan. Company claims salaries equal or surpass those in similar industries.

—From *Industrial Relations News*, March 30, 1957.